

ATTACHMENTS

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10828291

National Priorities List

Superfund hazardous waste site listed under the
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended in 1986

FIRESTONE TIRE & RUBBER CO. (ALBANY PLANT) Albany, Georgia

Firestone Tire & Rubber Co. has manufactured tires on a 329.2-acre site in Albany, Dougherty County, Georgia, since 1968. Until 1980, drums of waste cement were stored on the ground in an area of less than 1 acre. In another area, wastes were buried in a pit during fire-training exercises.

In 1986, a consultant to the company detected benzene, 1,1-dichloroethylene, toluene, 1,1-dichloroethane, 1,1,1-trichloroethane, and zinc in on-site wells. An estimated 400 people obtain drinking water from private wells within 3 miles of the site, and 1,000 acres of cropland are irrigated with well water.

This facility obtained Interim Status under Subtitle C of the Resource Conservation and Recovery Act (RCRA) when it filed a Notification of Hazardous Waste Activity and Part A of a permit application to treat, store, or dispose of hazardous waste. Later, it withdrew its Part A and converted to generator-only status with EPA or State approval. Hence, it satisfies a component of EPA's NPL/RCRA policy.

HRS COVER SHEET

Facility name: Firestone Tire and Rubber Company
Location: 3300 Sylvester Rd.
Albany, GA 30726
EPA Region: Region IV
Person in charge of the facility: Mr. M. L. Yonas
Firestone Tire and Rubber Co.
1200 Firestone Parkway
Akron, OH 44317-0001

Name of reviewer: Charles P. Evans Date: August 25, 1987

General description of the facility:

The site is located at 3300 Sylvester Rd., Albany, GA 31703. The facility manufactured tires from 1968-1986. During the manufacturing process waste cement containing various solvents was generated. From 1968 until 1980, barrels of waste cement were stored on the ground next to the plant. Some of the waste generated was unaccounted for and presumed lost due to spillage.

Ground water contamination is the major concern. Several small water systems and homes with individual water systems are located within three miles of the site. These wells draw water from the Principal Artesian Aquifer.

Scores: $S_M = 35.39$ ($S_{gw} = 61.22$ $S_{sw} = 0$ $S_a = 0$)

$S_{PE} = \text{NOT RATED}$

$S_{DC} = 0$

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Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 (45)	1	45	45	3.1
If observed release is given a score of 45, proceed to line 4 . If observed release is given a score of 0, proceed to line 2 .					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 3	2		6	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score				15	
3 Containment	0 1 2 3	1		3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 (2) 3 4 5 6 7 8	1	2	8	
Total Waste Characteristics Score			20	28	
5 Targets					3.5
Ground Water Use	0 1 2 (3)	3	9	9	
Distance to Nearest Well/Population Served	0 4 8 12 16 20 24 12 16 18 20 24 (30) 32 35 40	1	30	40	
Total Targets Score			39	49	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			35,100	57,330	
7 Divide line 6 by 57,330 and multiply by 100			$S_{gw} = 61.22$		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

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Surface Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0 45	1	0	45	4.1	
If observed release is given a value of 45, proceed to line 4 . If observed release is given a value of 0, proceed to line 2 .						
2 Route Characteristics					4.2	
Facility Slope and Intervening Terrain	0 1 2 3	1	0	3		
1-yr. 24-hr. Rainfall	0 1 2 3	1	3	3		
Distance to Nearest Surface Water	0 1 2 3	2	4	8		
Physical State	0 1 2 3	1	1	3		
Total Route Characteristics Score			8	15		
3 Containment	0 1 2 3	1	3	3	4.3	
4 Waste Characteristics					4.4	
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	2	8		
Total Waste Characteristics Score			20	26		
5 Targets					4.5	
Surface Water Use	0 1 2 3	3	0	9		
Distance to a Sensitive Environment	0 1 2 3	2	0	6		
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 24 30 32 35 40	1	0	40		
Total Targets Score			0	55		
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	64,350		
7 Divide line 6 by 64,350 and multiply by 100			$S_{sw} = 0$			

**FIGURE 7
SURFACE WATER ROUTE WORK SHEET**

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Air Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0 45	1	0	45	5.1	
Date and Location:						
Sampling Protocol:						
If line 1 is 0, the $S_a = 0$. Enter on line 5 . If line 1 is 45, then proceed to line 2 .						
2 Waste Characteristics					5.2	
Reactivity and Incompatibility	0 1 2 3	1		3		
Toxicity	0 1 2 3	3		9		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8		
Total Waste Characteristics Score				20		
3 Targets					5.3	
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30		
Distance to Sensitive Environment	0 1 2 3	2		6		
Land Use	0 1 2 3	1		3		
Total Targets Score				39		
4 Multiply 1 x 2 x 3				35,100		
5 Divide line 4 by 35,100 and multiply by 100			$S_a =$	0		

FIGURE 9
AIR ROUTE WORK SHEET

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Groundwater Route Score (S _{gw})	61.22	3,748.44
Surface Water Route Score (S _{sw})	0.0	0.0
Air Route Score (S _a)	0.00	0.0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		3748.44
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		61.22
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		35.39

FIGURE 10
WORKSHEET FOR COMPUTING S_M

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Fire and Explosion Work Sheet													
Rating Factor	Assigned Value (Circle One)				Multi- plier	Score	Max. Score	Ref. (Section)					
1 Containment	1		3		1		3	7.1					
2 Waste Characteristics								7.2					
Direct Evidence	0		3		1		3						
Ignitability	0	1	2	3	1		3						
Reactivity	0	1	2	3	1		3						
Incompatibility	0	1	2	3	1		3						
Hazardous Waste Quantity	0	1	2	3	4	5	6	7	8	1	8		
Total Waste Characteristics Score							20						
3 Targets								7.3					
Distance to Nearest Population	0	1	2	3	4	5	1	5					
Distance to Nearest Building	0	1	2	3			1	3					
Distance to Sensitive Environment	0	1	2	3			1	3					
Land Use	0	1	2	3			1	3					
Population Within 2-Mile Radius	0	1	2	3	4	5	1	5					
Buildings Within 2-Mile Radius	0	1	2	3	4	5	1	5					
Total Targets Score							24						
4 Multiply 1 x 2 x 3							1,440						
5 Divide line 4 by 1,440 and multiply by 100						SFE =							

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

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Direct Contact Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
1 Observed Incident	0 45	1	0	45	8.1	
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2						
2 Accessibility	0 1 2 3	1	0	3	8.2	
3 Containment	0 15	1	15	15	8.3	
4 Waste Characteristics Toxicity	0 1 2 3	5	15	15	8.4	
5 Targets					8.5	
Population Within a 1-Mile Radius	0 1 2 3 4 5	4	8	20		
Distance to a Critical Habitat	0 1 2 3	4	0	12		
Total Targets Score			8	32		
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600		
7 Divide line 6 by 21,600 and multiply by 100			SDC = 0.0			

FIGURE 12
DIRECT CONTACT WORK SHEET

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GROUND WATER ROUTE

1. OBSERVED RELEASE (assigned value=45)

Contaminants detected (5 maximum):

The contaminants detected at levels significantly above background from samples collected by EPD personnel on 2/11/85 and by Woodward-Clyde Consultants on 2/18/86 include: benzene, 1,1 dichloroethene, toluene, and 1,1 dichloroethane, and 1,1,1 trichloroethane. See discussion on page 1-A. (reference 1,2,3,4, and 5)

Rationale for attributing the contaminants to the facility:

Solvents are known to have been used on site (ref. 3 p. 4). During a ground water investigation undertaken by Firestone Tire and Rubber Company, Woodward-Clyde Consultants detected benzene, toluene, 1,1 dichloroethane, 1,1 dichloroethene, and 1,1,1 trichloroethane in ground water samples collected from the site on 2/18/86 (ref. 3 p. 11&12). All concentrations of the above contaminants decrease as the distance from the facility increases. (reference 1,2,3,4, and 5)

2. ROUTE CHARACTERISTICS (not scored)

Depth to Aquifer of Concern:

Name/Description of Aquifer(s) of concern:

The aquifer of concern at the site is the Principal Artesian Aquifer (PAA). This formation is comprised of two materials: 1) a clayey residuum and 2) an inter layered limestone and sandy limestone sequence, also known as the Ocala (Limestone) Formation. The residuum is the weathered portion of the PAA. Even though the two materials exhibit different physical characteristics, geologically, they are considered the same formation because the residuum is derived solely from weathering (in-place) of the Ocala. However, the residuum on site is physically as a red to brown clay with tan sandy clay portions approaching the contacts with the Ocala. The thickness of the residuum is around 60 feet at the site. The thickness of the Ocala Limestone ranges from 150 to 200 feet in the area (ref. 6 p. 2). The Lisbon Formation lies below the the PAA. This formation serves as an aquatard separating the PAA from the underlying Tallahatta aquifer. (reference 6)

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern: N/A

Depth from the ground surface to the lowest point of waste disposal/storage: N/A

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COMPOUND	BACKGROUND WELL CONCENTRATION		DOWNGRAIENT WELL CONCENTRATION		REFERENCE 3
1. BENZENE	BMW-2	<1.0 ug/l	MW-1-1	199 ug/l	P 11&12 FIG. 1
2. TOLUENE	BMW-2	<1.0 ug/l	MW-1-1	135 ug/l	P 11&12 FIG. 1
3. 1,1 DICHLORETHENE	BMW-2	<0.5 ug/l	MW-7-4	348 ug/l	P 11&12 FIG. 1
4. 1,1 DICHLOROETHANE	BMW-2	<0.5 ug/l	MW-7-4	658 ug/l	P 11&12 FIG. 1
5. 1,1,1 TRICHLOROETHANE	BMW-2	<0.5 ug/l	MW-1-1	41.9 ug/l	P 11&12 FIG. 1

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Net Precipitation N/A

Mean Annual or seasonal precipitation (list months for seasonal): N/A

Mean annual lake or seasonal evaporation(list months for seasonal): N/A

Net precipitation (subtract the above figures): N/A

Permeability of Unsaturated Zone

Soil type in the unsaturated zone: N/A

Permability associated with soil type: N/A

Physical State

Physical state of substances at time of disposal (or present time for generated gases): N/A

3. CONTAINMENT (not scored)

Containment

Method(s) of waste or leachate containment evaluated: N/A

Method with the highest score: N/A

4. WASTE CHARACTERISTICS

Toxicity and Persistence (assigned value=18)

Compound(s) evaluated:

The compounds evaluated are:

compound	toxicity	persistence	matrix
PCB	3	3	18
lead	3	3	18
1,1 dichloroethene	3	2	15
1,1 dichloroethane	3	1	12
1,1,1 trichloroethane	3	1	12

PCBs were detected in soil around the plant's transformers (area 4) (ref. 3 pp. 4, 15, & 36). Lead was detected in production well 2 (PW-2) at six times the level of found in production well 1 (PW-1) (ref. 3 pp. 23, 24, & 36). The facility is known to have several gasoline storage tanks which were probably used to store leaded fuel. (ref 3 p. 3)

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Compound with the highest score:
The highest scoring compounds are PCBs and lead.
(reference 7 & 11)

Hazard Waste Quantity (assigned value=2)

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

The quantity of hazardous waste spilled at the facility is 110,000 pounds. From information supplied by Mr. Wayne Cope the quantity of hazardous substances produced at the facility from 1968 to 1980 is as follows:

950,000 pounds of waste cement produced 1968-1980
- 610,000 pounds of waste cement sent to local landfill 1968-1976

340,000 pounds of waste difference
- 230,000 pounds of waste cement recycled sent to a secure
hazardous waste disposal facility

110,000 pounds of waste cement lost

(reference 8)

Basis of estimating and/or computing waste:

The waste quantity was supplied by the plant's former environmental coordinator, Wayne Cope, in a phone conversation with Charles P. Evans of the Georgia EPD on 8/27/85. The soil around the waste storage area was reported to have been stained and the quantity of waste was unaccounted for and is presumed lost due to spillage.
(reference 8)

5. TARGETS (assigned value=30)

Ground Water Use (assigned value=3)

Use(s) of the aquifer of concern within a 3-mile radius of the facility:
The aquifer of concern is the Principal Artesian Aquifer. This aquifer is used as a source of drinking water and water for irrigation of cropland within three miles of the facility.
(reference 9 and 10)

Distance to the Nearest Well (assigned value=4)

Location of nearest well drawing from the aquifer of concern or occupied building not served by a public water supply:

The nearest well drawing from the aquifer of concern is the well of Mr. Keith Norton, 240 Bennet Dr., Albany, Georgia 31705.
(reference 10 page 2 & 3)

Distance to above well or building:

The distance from Mr. Norton's well to a known point of contamination (W-2) is 1600 feet. Sample W-2 was collected from water in an open ditch near a spring head on the west side of the plant .
(reference 10 page 3 and Ref 1, p 2)

Population Served by Ground Water Wells Within a 3-Mile Radius
(assigned value=3)

Identified water-supply well(s) drawing from aquifer(s) within a 3-mile radius and populations served by each:
(see next page)

The following population is served by wells in the aquifer of concern:
(The Principal Artesian Aquifer)

LOCATION	POPULATION
1. Big M Mobile Home Park (file data)	40.
2. Cabana Village Trailer Park (file data)	51
3. Homes in vicinity of Decidley Ln. (39 X 3.8) =	148.2
4. Homes on Bennett Rd. (10 X 3.8) =	38
5. Mitchel home north of Firestone plant (1 X 3.8) =	3.8
6. Homes south of and on Flemming Rd. (10 X 3.8) =	38
7. Mobile Home Park (12 X 3.8) =	45.6
(Flemming Rd. and Mock Rd.)	

TOTAL	364.6

(reference 9 and 10)

Computation of land area irrigated by supply wells drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

The Loberton Farm, located 1.7 miles south of the site, has 999 acres of cropland under irrigation from wells located within three miles of the site and drawing from the Principal Artesian Aquifer.
(999 acres X 1.5 people / acre = 1498.5 people)
(reference 10)

Total population served by ground water within a 3-mile radius:

The total population served by ground water within three miles of the site is:

364.6---ground water users
1498.5---from irrigation

1863.1 Total

(reference 10)

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SURFACE WATER ROUTE

1. OBSERVER RELEASE (not scored)

Contaminants detected in surface water at the facility or downhill from it (5 maximum): N/A

Rational for attributing to the contaminants to the facility: NA

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain (assigned value=0)

Average slope of the facility in percent: The average slope of the facility is 0.0%. There was no change in elevation of the transformer area. The horizontal extent of this area is 180 feet. The slope of this area is therefore $0/180 \times 100 = 0\%$.

Name/description of the nearest downslope surface water: The nearest down slope surface water is Arnold's lake south of the plant. (reference 11)

Average slope of terrain between facility and above cited surface water body in percent:

The average slope between the the most downhill point of contamination and the nearest surface water body is 0.44%. (calculation)

elevation of contaminated area-----220 feet above mean sea level (point A)

elevation of nearest surface water---200 feet above mean sea level (point B)

20 feet difference

The distance between the contaminated area and the probable point of entry is 4500 feet .

the slope is therefore $\frac{20}{4500} \times 100 = 0.44\%$

(reference 11)

Is the facility located either totally or partially in surface water?

No, the manufacturing facility is on a well drained location.

(reference 11)

Is the facility completely surrounded by areas of higher elevation?

No, the facility is drained by several ditches to Arnold's Lake south of the plant. Arnold's Lake empties into a man made canal and through several lift stations into the Flint River. (reference 11)

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1-Year 24-Hour Rainfall In Inches (assigned value=3)

The one year 24-hour rain fall rate is 3.5 inches in this area.
(reference 12)

Distance to Nearest Downslope Surface Water (assigned value=2)

The distance to the nearest downslope water is 4500 feet from the transformer area. Surface water flows from the transformer area into an open ditch on the west side of the plant into a ditch to surface water.
(reference 11)

Physical State of Waste (assigned value=1)

The physical state of the waste as deposited was semi-solid in a unconsolidated and unstabilized state.
(reference 8)

3. CONTAINMENT

Containment (assigned value=3)

Method(s) of waste or leachate containment evaluated:

The method of containment evaluated is an uncovered waste pile with waste unconsolidated, and no diversion or containment.
(reference 8)

Method with highest score:

N/A, only one method was evaluated.

4. WASTE CHARACTERISTICS

Toxicity and Persistence (assigned value=18)

Compounds(s) evaluated:

The compounds available to the surface water route are PBCs. PCBs were detected in soil samples from around the plant's transformer area (G-4-6-2) (reference 3 p. 15,4 and 5).

Compound with highest score:

N/A, only one compound was evaluated.

Hazard Waste Quantity (assigned value=2)

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give reasonable estimate even if quantity is above maximum):

The amount of spilled waste generated at the facility is 110,000 pounds.
(reference 8)

Basis for estimating and/or computing waste quantity:

The basis for the waste quantity is a phone conversation on 8/27/85 with the facility's former environmental coordinator, Wayne Cope.

950,000 pounds of waste cement produced by Firestone 1968-1980
- 610,000 pounds of waste cement sent to the landfill
 340,000 pounds of waste cement difference
- 230,000 pounds of waste cement recycled or disposed in a
 secure hazardous waste facility (reference 8)

110,000 pounds of waste cement unaccounted

5. TARGETS

Surface Water Use (assigned value=0)

Use(s) of surface within three miles downstream of the hazardous substance:

Arnold's lake is located inside the boundary of the facility and is not used as a source for drinking water or for recreational use.
(reference 9)

Is there a tidal influence?

No, the average elevation of the facility is 200 feet above mean sea level.
(reference 11)

Distance to a Sensitive Environment (assigned value=0)

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less: N/A

Distance to 5-acres (minimum) fresh-water wetland, if 1 mile or less:
N/A

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

There is no critical habitat of a federally protected endangered species within one mile of the site.
(reference 13)

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Population Served by Surface Water (assigned value=0)

Location(s) of water-supply intake(s) within three miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

No surface water intakes were located within three miles downstream of the hazardous substance. Drinking water for the city of Albany is served by ground water.
(reference 14)

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre): NA

Total population served: NA

Name/description of nearest of above water bodies: NA

Distance to above-cited intakes, measured in stream miles: NA

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AIR ROUTE (NOT SCORED)

1. OBSERVED RELEASE Contaminants Detected:

Date and location of detected contaminants:

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Toxicity:

Most toxic compound:

Hazardous Waste Quantity:

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

3. TARGETS

Population Within 4-Mile Radius

Circle radius used, give population and how determined: 0 to 4 mi. 0 to 1 mi. 0 to 1/2 mi. 0 to 1/4 mi.

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

LAND USE

Distance to commercial / industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area if 2 miles or less:

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Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 mile or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

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DIRECT CONTACT

1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

None

2. ACCESSIBILITY (assigned value=0)

Describe type of barrier(s):

Access to the facility is controlled by 24 hour security personnel.
(reference 15)

3. CONTAINMENT (assigned value=15)

Type of containment, if applicable:

There is no containment of the waste material. PCBs were detected in soil scrapings around the plant's transformers.
(references 1,2, and 3)

4. WASTE CHARACTERISTICS (assigned value=3)

Toxicity

Compounds evaluated:

The compound evaluated was PCB.
(reference 3, 4, and 5).

Compound with the highest score:

N/A, only one compound was evaluated.

5. TARGETS (assigned value=2)

Population within one-mile radius

Two hundred eighty one people reside within one mile of the facility.
(reference 11)

Distance to critical habitat (of endangered species)

NA

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FIRE AND EXPLOSION (NOT SCORED)

1. CONTAINMENT

Hazardous substances present:

Type of containment, if applicable:

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

Ignitability

Compound used:

Reactivity

Most reactive compound:

Incompatibility

Most incompatible pair of compounds:

Hazardous Waste Quantity:

Total quantity of substances at the facility:

Basis of estimating and/or computing waste quantity:

3. TARGETS

Distance to Nearest Population

Distance to Nearest Building

Distance to Sensitive Environment:

Distance to wetland:

Distance to critical habitat:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forrest, or wildlife reserve, if 2 miles or less:

Distance to residential area if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

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Distance to prime agricultural land in production within past 5 years, if 2 mile or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Population within 2-Mile Radius

Buildings Within 2-Mile Radius

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APPENDIX F

References to HRS

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2. Evans, Charles P., Georgia Environmental Protection Division, Record of Telephonic Conversation with Danny Reed, Georgia Environmental Protection Division Laboratory Chemist, 8/26/86.
3. Woodward-Clyde Consultants, Environmental Site Assessment of Firestone Tire and Rubber Company Facility at Albany Georgia; May 19, 1987; Woodward-Clyde Consultants, 32111 Aurora Rd., Solon, Ohio 44139.
4. Evans, Charles P., Georgia Environmental Protection Division, Record of Telephonic Conversation with Robert S. Glowacky, Laboratory Manager, Aqua Tech Environmental Consultants, 6/25/87.
5. Evans, Charles P., Georgia Environmental Protection Division, Record of Telephonic conversation with Jeffrey A. Smith, Laboratory Manager, Aqua Tech Environmental Consultants, 6/25/87.
6. Hicks, D. W., Krause, R. E., Clark, J. S., Geohydrology of The Albany Area, Georgia, Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey, 1981.
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8. Evans, Charles P., Georgia Environmental Protection Division Record of telephonic conversation with Wayne B. Cope, Firestone tire and Rubber Company, 8/27/85.
9. Evans, Charles P., Georgia Environmental Protection Division, memorandum, to Mike Allred, Georgia Environmental Protection Division, 9/3/86.
10. Evans, Charles P., Georgia Environmental Protection Division, Trip Report-Firestone Tire and Rubber Company, 2/16/87.
11. United States Geological Survey Map, Albany East Quadrangle, 7.5 minute series, 1:24,000 scale, 1956 photorevised 1971.
12. National Oil and Hazardous Substances Contingency Plan, Appendix A, 40 CFR Part 300, 47 Federal Register, 31219.
13. United States Department of The Interior, Fish and Wildlife Service, Region Four Endangered Species Notebook, August 23, 1985.

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14. Steeves, W. M., BCM Converse Inc. Engineers, Mobile, Alabama, Ground Water Use and Planning, Southeastern section of the American Water Works Association Annual Conference, Jekyll Island, Georgia, April 29-May 2, 1984.
15. Evans, Charles P., Georgia Environmental Protection Division, memorandum to Mike Allred, Georgia Environmental Protection Division, 9/3/86.

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**SUMMARY OF SOIL SAMPLING/REMOVAL
PCB TRANSFORMER AREAS
THE FIRESTONE TIRE & RUBBER COMPANY
ALBANY, GEORGIA**

1.0 INTRODUCTION

Woodward-Clyde Consultants (WCC) was retained by The Firestone Tire & Rubber Company (Firestone) to inspect the excavation of PCB-contaminated soil and gravel at Firestone's inactive facility in Albany, Georgia. The PCB's apparently had leaked from several transformers located in two areas at the plant. WCC's responsibilities included sampling and testing to delineate the areal extent of PCB contamination, inspection of the excavation procedure, and final sampling. All work was performed in general accordance with EPA regulation 40 CFR Part 761 Subpart G, issued in the 2 April 1987 Federal Register. According to this regulation, the main transformer area at Firestone would be subject to regulation under the category of "other restricted access (nonsubstation) areas" since it is both farther than 0.1 km from any residential or commercial area and limited by a man-made barrier that, at Firestone, consists of a four-foot high, twin guardrail (Part 761.123). As such, any soil contaminated by a leak or spill of PCB-laden material must be cleaned to 25 ppm PCB's by weight (Part 761.125). The single transformer located north of the cooling towers may be considered a "nonrestricted access area" because it has no barrier. Under 40 CFR Part 761, a PCB leak or spill in such an area must be cleaned to 10 ppm PCB's by weight, provided that the soil is excavated to a depth of at least 10 inches (Part 761.125). At the Firestone plant, both areas were cleaned to less than 10 ppm PCB's by weight, and soil was excavated to a minimum depth of 24 inches.

2.0 INITIAL SAMPLING

Sampling by WCC personnel on two previous occasions indicated PCB contamination in soil in several areas around the four main transformers and the

transformer just north of the cooling towers. Concentrations ranged from 1.3 to 1370 ppm. The locations and measured PCB concentrations of previous samples are shown on Figure 1.

In order to delineate the total area of contaminated soil around each transformer, additional soil sampling was performed by WCC on 4 May 1987. Samples were obtained by digging to the specified depth with a shovel, excavating a scoop of soil at that depth, and transferring a representative portion of the soil that did not come in contact with the shovel blade into an appropriate sample container. Forty-six (46) samples were obtained in the locations shown on Figure 2.

All soil samples were analyzed for PCB's by a WCC chemist, using a McGraw-Edison PCB Field Test Kit. Results from this testing are presented in Table 1. Based on these results, additional sampling appeared to be necessary in several areas to further define the areas of contamination. Sixteen (16) additional samples were obtained in the manner described previously. Locations of these samples are also shown in Figure 2. These samples were also analyzed with the PCB field test kit and results are presented in Table 1. Based on these results, previous analytical results on other samples, and the locations of nearby boundaries (such as the plant wall), the areas of contaminated soil to be removed were delineated.

3.0 REMOVAL/DISPOSAL OF CONTAMINATED SOIL

Contaminated soil was removed from designated areas around the former transformer locations by Rollins Environmental Services, Inc. of Baton Rouge, Louisiana on 5 and 6 May 1987. All excavation of soil was directed by WCC personnel. Soil was excavated with a large trackhoe and placed directly into a plastic-lined semi-trailer. The contaminated soil was then hauled to the Chemical Waste Management landfill in Emelle, Alabama for disposal. Manifesting of each load of soil (three in all) was handled by Rollins and Firestone personnel.

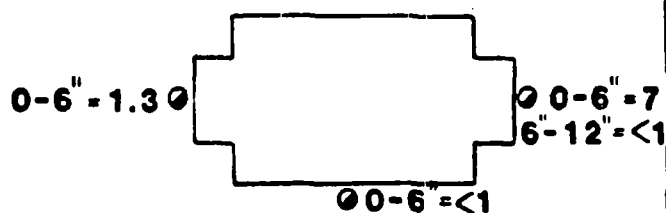
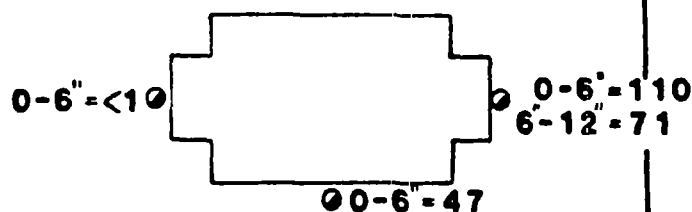
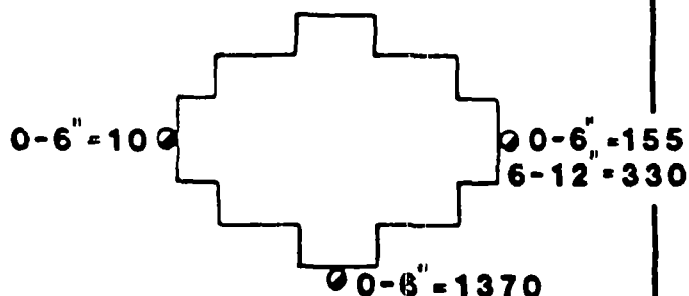
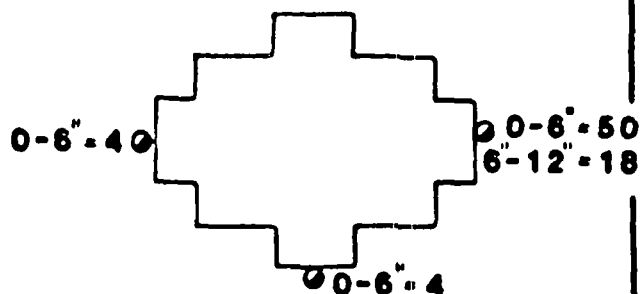
Soil was excavated to a depth of 24 to 36 inches below ground surface at all locations. In addition, a gravel layer approximately 6 to 8 inches in thickness which was present at the surface around transformers 1, 2, 3 and 4 was also removed from the designated areas and disposed along with the soil. Approximately 54½ tons of contaminated soil and gravel were removed from the designated areas.

4.0 POST-CLEANUP SAMPLING AND ANALYSES

Following excavation of PCB-contaminated soil in the designated areas, post-cleanup sampling was performed by WCC personnel in order to verify that soil containing more than 10 ppm PCB's had been removed. Sampling locations are shown on Figure 3 along with the approximate boundaries of the excavated areas. Samples were taken in the bottom of each excavation by first scraping away loose soil along with 2 to 3 inches of in-place soil which could be lightly contaminated due to contact with the trackhoe bucket. A representative portion of soil was then excavated with a shovel and a portion of the soil not touching the shovel blade was transferred to a sample jar which was provided by the analytical laboratory. All samples were packed in an iced, insulated shipping container and sent via overnight courier to Aqua Tech Environmental Consultants, Inc. in Melmore, Ohio for PCB analyses. Results from these analyses were received by WCC within 24 hours after obtaining the samples. Table 2 is a compilation of the results from post-cleanup analytical testing. Based on the analytical results, further excavation was not required because no area was found to contain more than 10 ppm of PCB's in the soil.



NO SCALE



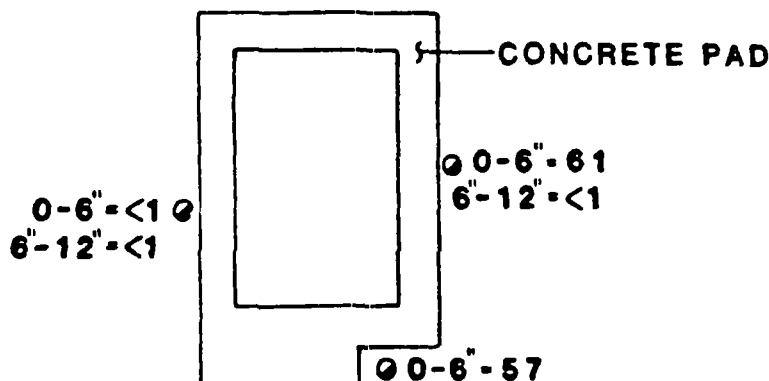
PLANT BUILDING

LEGEND

- SOIL SAMPLE LOCATIONS
- 4 CONCENTRATIONS OF PCB'S IN (PARTS PER MILLION)



NO SCALE



TRANSFORMER NEAR COOLING TOWERS

GENERAL LOCATIONS OF INITIAL TRANSFORMER AREA SAMPLES FIRESTONE TIRE AND RUBBER COMPANY - ALBANY, GEORGIA

DRAWN BY: REM

CHECKED BY: VMB

PROJECT NO: B5C7103

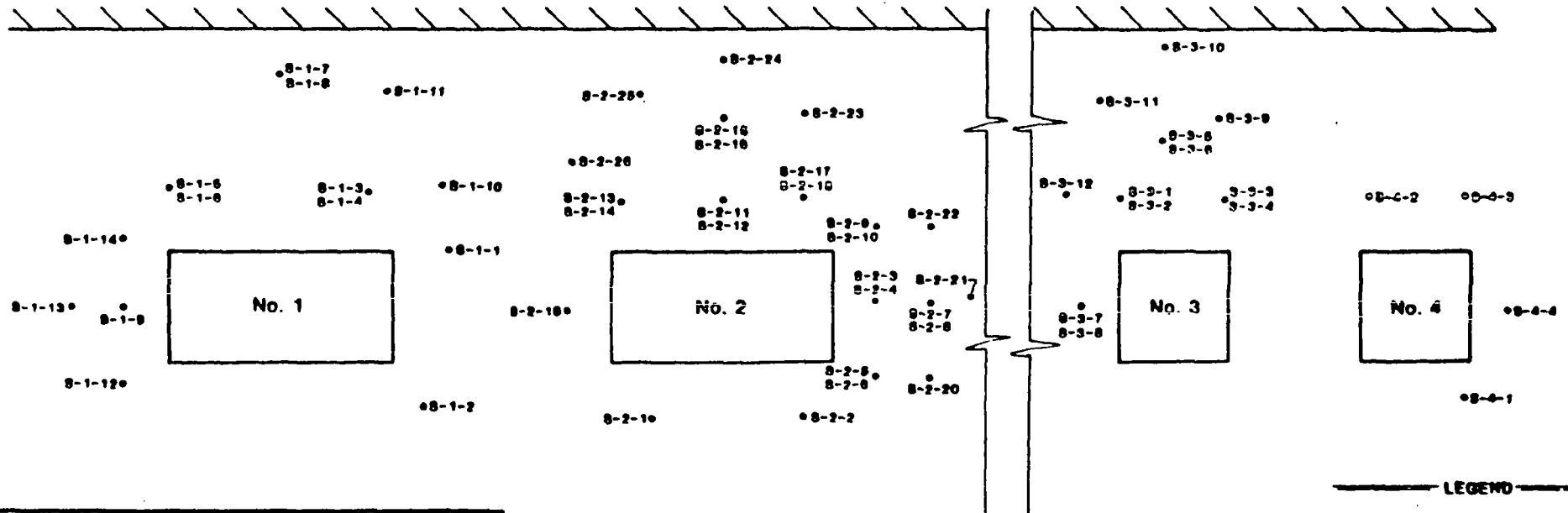
DATE: 4-23-87

FIGURE NO: 1

Woodward-Clyde Consultants

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

FIRESTONE PLANT



LEGEND

S-1-1 • SOIL SAMPLING LOCATIONS



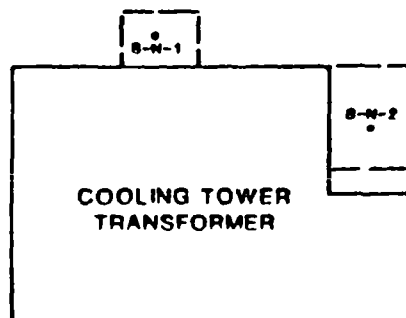
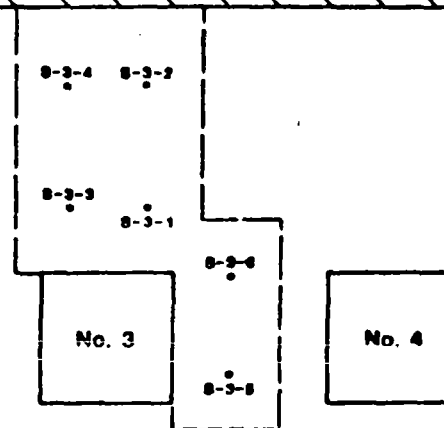
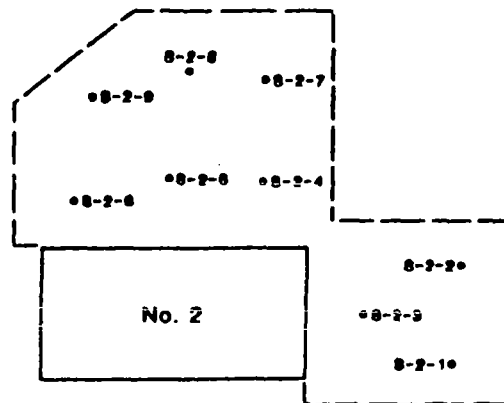
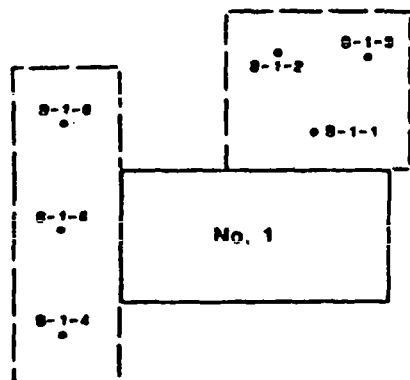
COOLING TOWER
TRANSFORMER

SAMPLE LOCATIONS FOR ASSESS
EXTENT OF CONTAMINATION
THE FIRESTONE TIRE & RUBBER COMPAN
ALBANY, GEORGIA

Woodward-Clyde Consultants

DRAWN: NEM	JOB NUMBER BSC7103-00	DATE: 8-20-00
CHECKED: VMS		FIGURE NO.

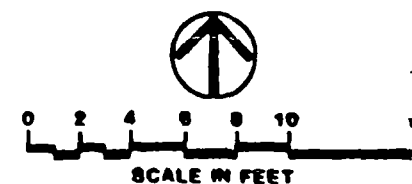
FIRESTONE PLANT



LEGEND

S-1-10 SOIL SAMPLE LOCATIONS

EXCAVATION BOUNDARY



CLEANUP EXCAVATION LIMITS or
POST-CLEANUP SAMPLE LOCATIONS
THE FIRESTONE TIRE & RUBBER COMPANY
ALBANY, GEORGIA

Woodward-Clyde Consultants

DRAWN: REM	JOB NUMBER 89C7103-00	DATE: 6-20-
CHECKED: VMS		FIGURE NO.

TABLE 1. RESULTS OF PCB ANALYSES ON PRE-CLEANUP SAMPLES
FIRESTONE TIRE & RUBBER CO. - ALBANY, GEORGIA

SAMPLE NO.	SAMPLE DEPTH	PCB's (ppm)	SAMPLE NO.	SAMPLE DEPTH	PCB's (ppm)
S-1-1	6 "	BMDL	S-3-1	6 "	54
S-1-2	6 "	BMDL	S-3-2	12 "	BMDL
S-1-3	6 "	36	S-3-3	6 "	BMDL
S-1-4	12 "	54	S-3-4	12 "	BMDL
S-1-5	6 "	BMDL	S-3-5	6 "	20
S-1-6	12 "	BMDL	S-3-6	12 "	BMDL
S-1-7	6 "	BMDL	S-3-7	6 "	BMDL
S-1-8	12 "	BMDL	S-3-8	12 "	BMDL
S-1-9	SURFACE	17	S-3-9	6 "	BMDL
S-1-10	6 "	BMDL	S-3-10	6 "	450
S-1-11	6 "	BMDL	S-3-11	6 "	352
S-1-12	6 "	13	S-3-12	6 "	BMDL
S-1-13	6 "	BMDL			
S-1-14	6 "	10	S-4-1	6 "	BMDL
			S-4-2	6 "	BMDL
S-2-1	6 "	BMDL	S-4-3	6 "	BMDL
S-2-2	6 "	BMDL	S-4-4	6 "	BMDL
S-2-3	6 "	1540			
S-2-4	12 "	1540	S-N-1	6 "	BMDL
S-2-5	6 "	BMDL	S-N-2	6 "	BMDL
S-2-6	12 "	BMDL	S-N-3	6 "	BMDL
S-2-7	6 "	576	S-N-4	3 "	BMDL
S-2-8	12 "	BMDL	S-N-5	3 "	BMDL
S-2-9	6 "	BMDL	S-N-6	6 "	BMDL
S-2-10	12 "	BMDL			
S-2-11	6 "	12			
S-2-12	12 "	300			
S-2-13	6 "	16			
S-2-14	12 "	BMDL			
S-2-15	6 "	254			
S-2-16	12 "	42			
S-2-17	6 "	BMDL			
S-2-18	12 "	BMDL			
S-2-19	6 "	BMDL			
S-2-20	6 "	BMDL			
S-2-21	6 "	BMDL			
S-2-22	6 "	BMDL			
S-2-23	6 "	1800			
S-2-24	6 "	68			
S-2-25	6 "	BMDL			
S-2-26	6 "	20			

NOTES: 1. Field test results using McGraw-Edison PCB Test Kit
2. BMDL = Below Method Detection Limit (10 ppm)

aibocb

Table 2. RESULTS OF PCB ANALYSES ON POST-CLEANUP SOIL SAMPLES
FIRESTONE TIRE & RUBBER CO. - ALBANY, GEORGIA

Woodward-Clyde Consultants
Project No. 87C3755
Date Received: 05-07-87

Atec No.	Client No.	Total PCB's	Date Analyzed	Analyst
11533	ALB S-1-1	0.2	05-08-87	CR
11534	ALB S-1-2	0.2	05-08-87	CR
11535	ALB S-1-3	< 0.1	05-08-87	CR
11536	ALB S-1-4	< 0.1	05-08-87	CR
11537	ALB S-1-5	1.7	05-08-87	CR
11538	ALB S-1-6	0.2	05-08-87	CR
11524	ALB S-2-1	< 0.1	05-08-87	CR
11525	ALB S-2-2	2.0	05-08-87	CR
11526	ALB S-2-3	0.2	05-08-87	CR
11527	ALB S-2-4	0.4	05-08-87	CR
11528	ALB S-2-5	3.6	05-08-87	CR
11529	ALB S-2-6	0.1	05-08-87	CR
11530	ALB S-2-7	1.7	05-08-87	CR
11531	ALB S-2-8	0.4	05-08-87	CR
11532	ALB S-2-9	0.4	05-08-87	CR
11520	ALB S-3-1	< 0.1	05-08-87	CR
11521	ALB S-3-2	< 0.1	05-08-87	CR
11522	ALB S-3-3	< 0.1	05-08-87	CR
11523	ALB S-3-4	7.2	05-08-87	CR
11539	ALB S-3-5	< 0.1	05-08-87	CR
11540	ALB S-3-6	< 0.1	05-08-87	CR
11541	ALB S-N-1	< 0.1	05-08-87	CR
11542	ALB S-N-2	< 0.1	05-08-87	CR

Above results quantitated in mg/kg dry weight as Aroclor 1254

WAS DISPOSED AT THE LOCAL LANDFILL. FROM 1976-1980 THE WASTE
CEMENT WAS SHIPPED TO CHEMICAL WASTE MANAGEMENT'S FACILITY IN
EMELLE, AL. THE AROMATIC SOLVENTS WERE SHIPPED TO RAMSEY CHEMICAL,
IN VALDOSTA, GA. FOR RECLAMATION & RETURN, A TOTAL OF 230,000 POUNDS
610,000 POUNDS
THE BALANCE OF THE WASTE ABOUT 4,000 POUNDS IS ESTIMATED TO ~~BE~~ HAVE
BEEN LOST DUE TO SPILLAGE.

THE FACILITY HAS TWO DEEP WELLS ON-SITE FROM WHICH IT OBTAINS
ITS PROCESS WATER. BOTH WELLS ARE 214' DEEP. AN 97,971
GALLONS OF WATER HAS BEEN EXTRACTED IN THE PREVIOUS SIX
MONTHS. ~ 16,300 gal / month

PRELIMINARY ASSESSMENT
TELEPHONE CONVERSATION RECORD

Site Name: FIRESTONE TIRE & RUBBER CO. I.D.# GAD990855074

Location Address: 3300 SYLVESTER RD. ALBANY, GA. 31715

Phone: (912)436 - 8861.

Contact: WAYNE B. COPE Title: ENVIRONMENTAL COORDINATOR

Address: SAME

Phone: (912)436 - 8861.

Authority: Section 3012 of CERCLA, Comprehensive Environmental Response, Compensation and Liability Act.

Facility has notified EPA via - RCRA 3001 site is in HWDMS
CERCLA 103c site is in NOTIS

Need Information concerning waste generation and disposal prior to Nov. 19, 1980.

How long has facility been in operation? SINCE 1968

What kind of wastes were generated and how much?

WASTE CEMENT CONTAINING NAPHTHA (50%) AND AROMATIC SOLVENTS (50%)

A TOTAL OF 950,000 POUNDS SINCE 1968. FROM 1968-1976 ALL WASTE (OVER)

Was it disposed on site and where?

SOLVENT LOST AT THREE LOCATIONS ON-SITE.

Was it transported offsite and where?

WASTE CEMENT ~~TO LANDFILL~~ & SOLVENT TO LANDFILL 68-76; FROM 76-80 WASTE CEMENT TO EMELLE, AL
+ SOLVENT TO RAMSEY CHEMICAL.

Was it treated and how?

WASTE SOLVENTS TO RAMSEY CHEMICAL IN VALDOSTA FOR RECLAMATION.

Have there been any past spills? Describe.

AN ESTIMATED 110,000 POUNDS OF NAPHTHA & WASTE CEMENT SOLVENTS ARE ESTIMATED
TO HAVE BEEN LOST DUE TO SPILLAGE ON-SITE. 3 ACRES OF CONTAMINATED SOIL.

Date of call: 8/27/85 Time: 1:10 PM

(over)

Charles P. Egan

AFFIDAVIT OF WAYNE B. COPE

WAYNE B. COPE, being duly sworn, deposes and says as follows:

1. I was employed by the Firestone Tire and Rubber Company, P.O. Box 1708, Albany, Georgia from 1969 to November 30, 1985. I was the environmental coordinator at the Firestone Albany plant from 1972 to 1985, except for a period of approximately one year from 1975 to 1976.

2. In the course of my duties as environmental coordinator for the Albany plant, I was responsible for communicating with Georgia Department of Natural Resources (DNR) and United States Environmental Protection Agency (EPA).

3. On August 27, 1985, I had a telephone conversation with a Mr. Charles Evans of DNR. I have reviewed a copy of a telephone conversation record prepared by Mr. Evans to memorialize our conversation of that day. Mr. Evans' telephone conversation record indicates that he misunderstood much of the information I told him that day.

4. I recall telling Mr. Evans that Firestone Albany generated three to four drums of cement wastes per week, which over twenty years would amount to something less than 200,000 gallons. I told Mr. Evans that cement wastes are generally pourable with some amount of solids and sludges present. I told Mr. Evans that cement waste contained naphtha and an aromatic solvent, toluene, but did not contain chlorinated solvents.

5. I do not specifically recall telling Mr. Evans that wastes were disposed at the local landfill from 1968 to 1976, but I may have said that. I do not recall saying that 610,000 pounds of cement wastes were generated during that year. I am certain that I would not have said that because 610,000 pounds would be far more than the amount of cement waste generated during those years. However, 610,000 pounds seems a reasonable estimate of the amount of all liquid wastes generated during those years. As environmental coordinator, I had knowledge of all wastes generated at Albany. Most liquid wastes generated at

the plant were oils and greases from Banbury operations which do not contain waste cements.

6. I recall telling Mr. Evans that cement wastes were disposed at Chem Waste Management's Emelle, Alabama facility from 1980 to 1985.

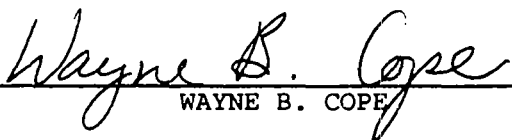
7. I did not tell Mr. Evans that the aromatic solvent portion of waste cement was recycled at Ramsey Chemical. Waste cement could not be reclaimed and had to be disposed. Firestone only shipped 1,1,1-trichloroethane (TCA) and methylene chloride to Ramsey Chemical.

8. I generally recall telling Mr. Evans that a total of about 4,000 pounds of waste cement had been spilled into the plant's sanitary sewage system during three separate events over the course of the plant's operations. I also noted that there were two spill events involved with spillage of TCA onto plant grounds. One spill event involved about three drums of TCA near the RCRA storage area, and on the other occasion about two drums of TCA were spilled east of the drum storage area near the end of the service road.


9. I never said that 110,000 pounds of naphtha and waste solvents were spilled at the plant. I did tell Mr. Evans of an incident that I did not witness but later heard about, at which approximately 200 drums of flammable liquid, which is about 110,000 gallons, were burned. I suspect Mr. Evans confused gallons for pounds. I am not aware of any three-acre site at the Albany plant at which spills occurred.

10. The above information is true and accurate to the best of my personal knowledge.

FURTHER AFFIANT SAYETH NOT.


WAYNE B. COPE

SUBSCRIBED AND SWORN BEFORE ME:


Notary Public, Peach Co., Ga.
My Commission Expires: 8-22-89

ss: State of Georgia
County of Dougherty

AFFIDAVIT OF CHARLES S. HOMOLA

CHARLES S. HOMOLA, being duly sworn, deposes and says as follows:

1. I have been employed by the Firestone Tire and Rubber Company, 1200 Firestone Parkway, Akron, Ohio, since 1968. From 1968 to present, I have been employed by Firestone at its plant in Albany, Georgia as Energy and Environmental Section Manager.

2. I have reviewed Firestone files concerning the amount of cement waste generated by the Albany plant and the methods of disposal of that waste.

3. Upon review of Firestone files, records indicate that Firestone generated the following amounts of waste cement manifested and disposed of in the Chem Waste Management, Emelle, Alabama facility: 1981 - 90,266 lbs., 1982 - 22,933 lbs., 1983 - 52,600 lbs., 1984 - 136,611 lbs., 1985 - 18,000 lbs., and 1986 - 23,620 lbs. To the best of my knowledge, prior to 1981 Firestone disposed of all its waste cement off site with the exception of the one-time burning of these wastes referenced under item 6 of this affidavit. Also, I would note that the amounts of waste cement generated during the time the plant began operations until conversion to radial passenger tire production were significantly less than amounts indicated above. To my recollection conversion from bias to radial production occurred sometime during 1975-1976.

4. Upon review of Firestone files, records indicate that Firestone generated the following amounts of 1,1,1-trichloroethane (TCA) for recycling in the Ramsey Chemical Company facility located in Valdosta, Georgia: 1981 - 26,840 lbs., 1982 - 6,500 lbs., 1983 - 5,400 lbs., 1984 - 5,870 lbs., 1985 - 6,500 lbs., and 1986 - 650 lbs. Prior to 1980 Firestone did not generate any significant quantities of spent TCA and it was only mainly utilized by Firestone's maintenance department. Firestone also used Ramsey Chemical Company for handling its other waste solvent streams consisting mainly of waste naphtha, waste hexane and waste toluene. Records indicate that Firestone sent

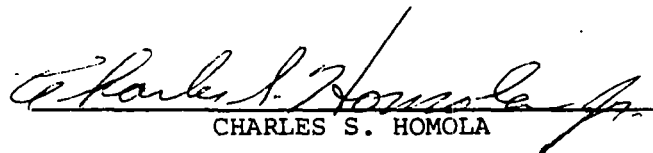
the following quantities of these solvents to Ramsey: 1980 - 750 lbs., 1981 - 40,454 lbs., 1982 - 41,780 lbs., 1984 - 1,100 lbs., and 1986 - 14,240 lbs. Firestone repurchased the recycled 1,1,1-trichloroethane from Ramsey Chemical for subsequent use in its operations while the other solvent stream was recycled and commercially distributed by Ramsey Chemical to other markets.

5. Based on my review of Firestone's records and my knowledge of waste handling practices at the Albany plant, essentially all of the waste cement generated was accounted for. Records of amounts of cement mixed including "off-batch" quantities and in-plant cement usage records were accurately compiled and from these records waste cement generation rates were found to be consistent with waste cement amounts being disposed of off-site. The Albany plant never experienced spills of 110,000 pounds of naphtha and waste cement as indicated in Mr. Evans, Georgia DNR, memorandum dated August 27, 1985.

6. I was present at the Albany plant in June 1980 and witnessed the burning of flammable liquid waste cement in a fire control exercise. To my knowledge, this was the only exercise of this type every conducted at the Albany plant. During the exercise, about 60 to 70 partially filled drums of liquid waste cement were burned. The fire was confined to an area of approximately 75 feet in diameter. I have no knowledge of a three-acre spill area at the Albany plant.

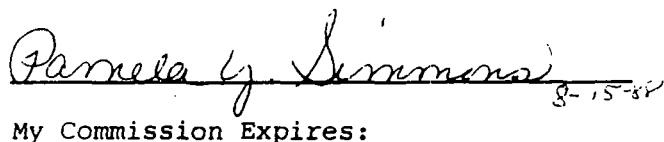
7. The above information is true and correct to the best of my personal knowledge.

FURTHER AFFIANT SAYETH NOT.


CHARLES S. HOMOLA

SUBSCRIBED AND SWORN BEFORE ME:

ss: State of Georgia
County of Dougherty


My Commission Expires: 8-15-88

Notary Public, Dougherty County, Georgia
My Commission Expires August 15, 1988

8-28-85

FIRESTONE TIRE AND RUBBER CO.
PRELIMINARY ASSESSMENT COVER SHEET
GAD990855074

A. HISTORY OF SITE

The Firestone Tire & Rubber facility at 3300 Sylvester Road, Albany, Georgia 31705 began the manufacture of vehicle tires in 1968. From 1968 to 1976 all waste generated (about 610,000 lbs.) at the facility was sent to the local landfill. This waste material included cement containing naphtha and 1,1,1 trichloroethane. From 1976 to 1980 waste solvents (160,000 lbs.) were shipped to Ramsey Chemical in Valdosta, Georgia for reclamation. The waste cement (230,000 lbs.) was shipped to Emelle, Alabama for disposal. Since 1980, all hazardous waste has been shipped to Chemcial Waste Management's site in Emelle, Alabama. An estimated 4,000 pounds of hazardous waste is unaccounted for and is estimated to have been lost by spillage on site. Carbon black, a non-hazardous waste generated at the facility was disposed at the local landfill. In August 1983, Firestone withdrew their application for a hazardous waste facility permit and they are now classified as a hazardous waste generator.

B. NATURE OF HAZARDOUS WASTE

Firestone generates a waste rubber cement containing naphtha and 1,1,1 trichloroethane from their tire cleaning operations. Both of the compounds have toxic characteristics. An estimated 4,000 pounds of these waste solvents have been lost onsite due to spillage. For many years waste solvents were stored on bare earth. Presently waste solvent and waste cement is stored on a covered concrete pad. The pad is diked and has a blind sump for trapping any leakage.

C. DESCRIPTION OF HAZARDOUS CONDITIONS, INCIDENTS, PERMIT VIOLATIONS

Spillage of wastes on the ground.

D. ROUTES FOR CONTAMINATION

Infiltration into the groundwater and surface runoff are possible routes of contamination.

E. POSSIBLE AFFECTED POPULATION AND RESOURCES

The City of Albany, population 73,934, lies west of site. The population is not known to be affected by waste disposal practices at the site.

The City of Albany obtains drinking water from twenty-nine wells, 400-1,000 feet deep, located in and around the city. Two of these wells are located within a two mile radius of the site and six city wells are located within a three mile radius. The facility utilizes two on-site

wells to supply process water. However, city water is used as a source of drinking water at the facility. A system of canals surrounds the facility on the east, west, and south sides. These canals receive surface runoff and process/cooling water from the plant. The water is collected in the onsite process water holding basin (Arnold's Lake) before being discharged under an NPDES permit to the Flint River.

F. RECOMMENDATIONS AND JUSTIFICATIONS

Onsite spillage of waste solvent is known to have occurred and the potential for ground water contamination exists. The City of Albany depends on groundwater for its water supply. Thus, a Site Inspection with a "MEDIUM" priority is recommended for this site.

G. REFERENCE TO SUPPORTING DATA SOURCES

1. USGS Map, Albany East, GA Quadrangle (Photorevised, 1971), 1:24,000 scale.
2. Trip Report, April 7, 1983; Firestone Tire and Rubber Co., Inc. P. O. Box 1708, Albany, GA, 31701.
3. Letter, August 17, 1983; regarding Request for Facility Status Change for Firestone Tire and Rubber Company, Albany, GA. GAD990855704.
4. Phone Conversation, August 27, 1985; with Wayne B. Cope, Environmental Coordinator, Firestone Tire and Rubber Company, Albany, GA. GAD990855704.

CPE/mcw028



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

IDENTIFICATION
01 STATE 02 SITE NUMBER
GA D990855074

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site) Firestone Tire & Rubber Company		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 3300 Sylvester Road			
03 CITY Albany	04 STATE GA	05 ZIP CODE 31705	06 COUNTY Dougherty	07 COUNTY CODE 95	08 CONG DIST 02
09 COORDINATES LATITUDE 31° 34' 00.6" LONGITUDE 084° 03' 02.0"					

10 DIRECTIONS TO SITE (Starting from nearest public road) From the intersection of State Route 257 and State Route 50, proceed east on State Route 50 for 2.3 miles to the facility. The site lies on the south side of State Route 50.

III. RESPONSIBLE PARTIES

01 OWNER (if known) Firestone Tire & Rubber		02 STREET (Business, mailing, residential) 1200 Firestone Parkway			
03 CITY Akron	04 STATE GA	05 ZIP CODE 44317	06 TELEPHONE NUMBER '216' 379-7000		
07 OPERATOR (if known and different from owner) Same		08 STREET (Business, mailing, residential)			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER ()		

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☒ A. RCRA 3001 DATE RECEIVED: **08-05-80** MONTH DAY YEAR ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103(c)) DATE RECEIVED: ____/____/____ MONTH DAY YEAR ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION <input checked="" type="checkbox"/> YES DATE 03-01-83 MONTH DAY YEAR <input type="checkbox"/> NO		BY (Check all that apply) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input checked="" type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input type="checkbox"/> F. OTHER: _____ (Specify)	
CONTRACTOR NAME(S): _____			

02 SITE STATUS (Check one) <input checked="" type="checkbox"/> A. ACTIVE <input type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN	03 YEARS OF OPERATION 1968 present BEGINNING YEAR ENDING YEAR <input type="checkbox"/> UNKNOWN
--	--

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Solvents - hexane, methylene chloride, 1,1,1 trichloroethane, and naphtha.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Possible contamination of ground water and surface water.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incident(s))
☐ A. HIGH (Inspection required promptly) ☒ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT W. B. Cope	02 OF Agency/Organization Firestone Tire & Rubber Company	03 TELEPHONE NUMBER '912' 436-8861
04 PERSON RESPONSIBLE FOR ASSESSMENT Charles P. Evans CPE	05 AGENCY DNR	06 ORGANIZATION EPD-RAU
07 TELEPHONE NUMBER '404' 656-7404		08 DATE 08-28-85 MONTH DAY YEAR

J. S. S. S. S.

[illegible]

EPA FORM 2070-12 (7-81)



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
GA 0990855074

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Possibility of ground water contamination from infiltration at the plant site.

01 ☒ B. SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Potential for surface water contamination from surface runoff.

01 ☐ C. CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ E. DIRECT CONTACT 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ F. CONTAMINATION OF SOIL 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Across) 04 NARRATIVE DESCRIPTION

Unknown

01 ☐ G. DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Unknown

01 ☐ H. WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ I. POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
GA D990855074

HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

01 ☐ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (include name(s) of species)

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

01 ☐ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES
(Spills/runoff/standing liquids/leaking drums)
03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

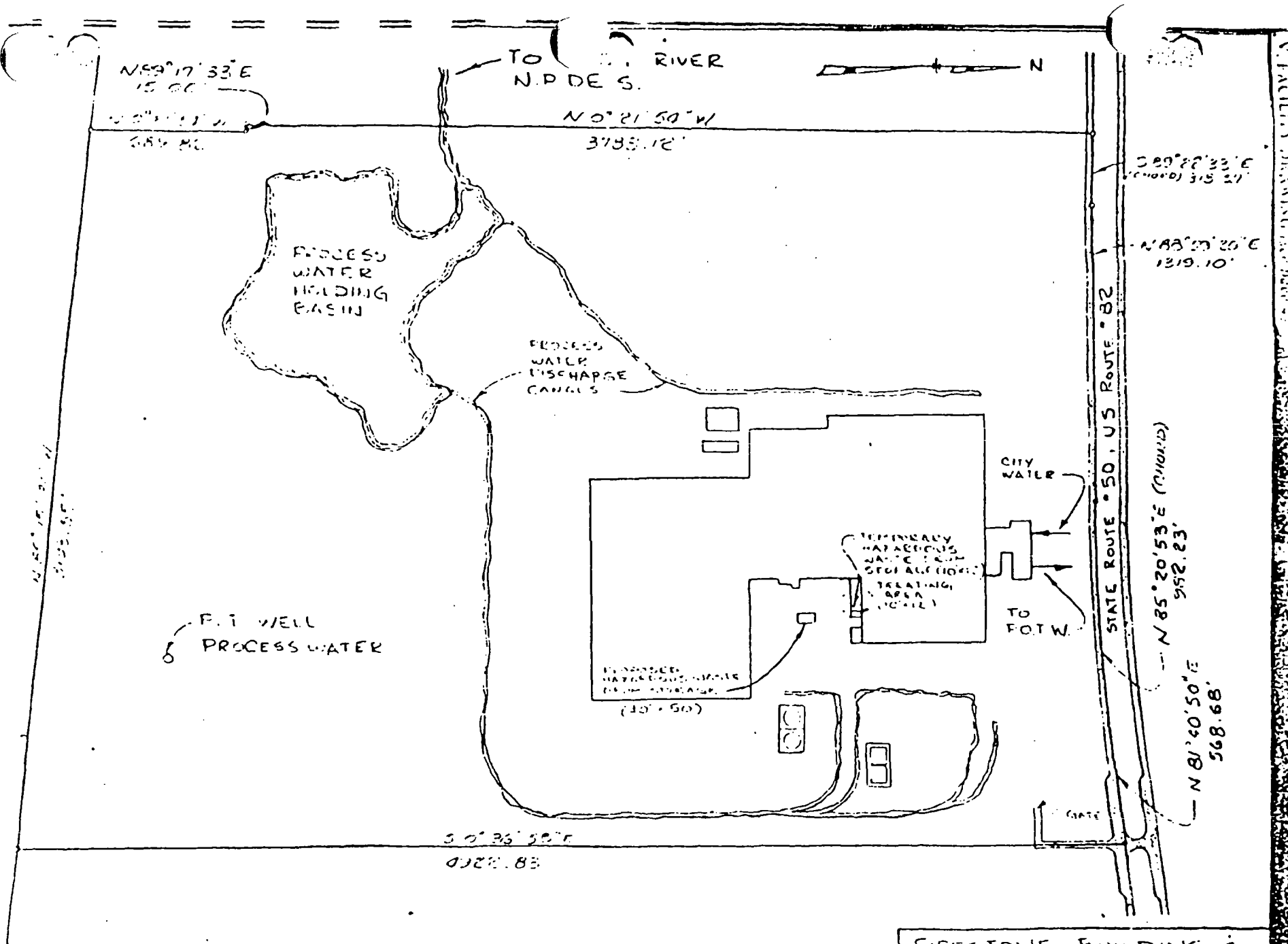
III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

Neighboring City of Albany withdraws about 17 million gallons per day from the Tallahatta, Clayton, and Providence aquifers.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

GA EPD State File - Goodyear Tire & Rubber Co.
GA EPD State File - (Groundwater Program) City of Albany Water System.



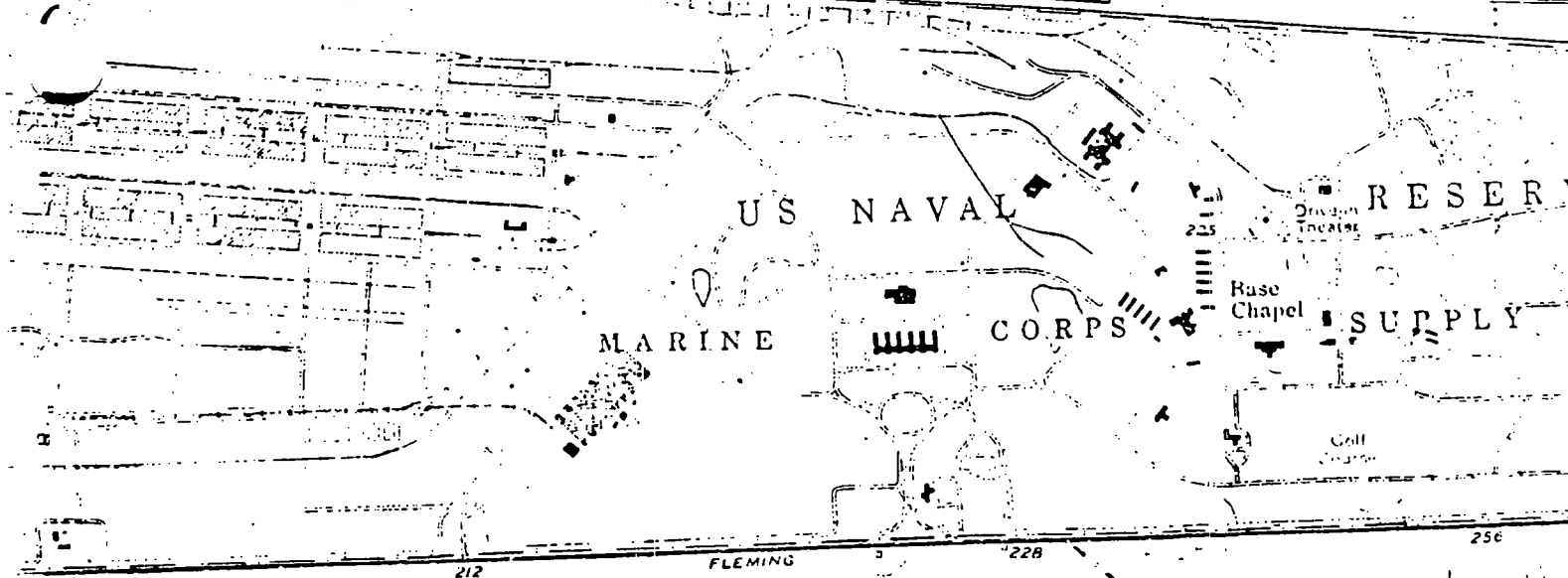
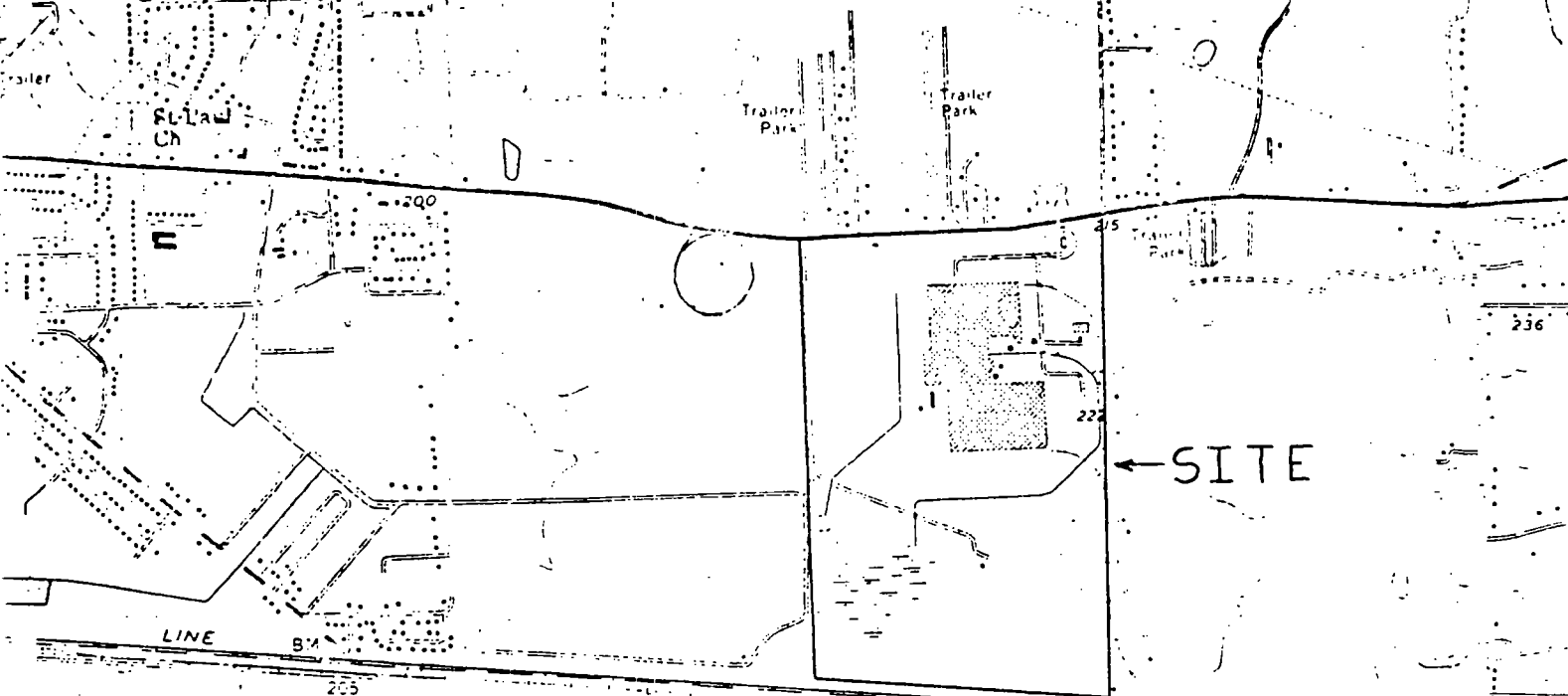
FIRESTONE PLANT

ALBANY, GEORGIA
SCALE: 1" = 600'

FIRESTONE BUILDING &
YARD LAYOUT FOR
HAZARDOUS WASTE PERMIT

SCALE: 1" = 600'
DATE: 10-21-80
DRAWN BY: D. HIRTLES

FIRESTONE TIRE AND RUBBER CO.
GAD990855074



ALBANY EAST, GA.
N3130-W8400/7.5

1956
PHOTO REVISID 1971
AMS 4147 II SE-SERIES V845



SAFETY PLAN

Site Name: Firestone Tire and Rubber Co.
Contact: Charles S. Homola
Address: 3300 Sylvester Rd., Albany, Ga 31705

Phone Number: (912) 436-8861

Purpose of Site Visit: ☐ PA ☒ SI Other(specify)

Proposed Date of Work: December 11, 1985

Proposed Site Investigation Team:

EPD Personnel:	Responsibilities:
Charles P. Evans-----	On-Site coordinator
Steve Walker -----	Site Assistance Team and Geologist

Others: None

Purpose: N/A

Plan Preparation: December 8, 1985

Prepared by: Charles P. Evans_(12/ 8/85)

Reviewed by: *J. Surawie* (12/10/85)

Emergency Phone Numbers:

Albany GSP----- (912) 439-4248
Local Ambulance----- (912) 439-7011
Fire Dept.----- (912) 432 1231
Dougherty Co. Police--- (912) 431-2191

Background Information: Firestone Tire and Rubber Co. manufactures vehicle tires. In their process they use naptha and 1,1,1 trichlorethane. Waste cement containing these solvents were at one time stored on bare earth. Some spillage is believed to have occurred. An estimated 4000 pounds of waste rubber cement is believed to have been lost due to spillage.

Site Status: ☒ Active ☐ Inactive ☐ Unknown

Site Discription: The site is located on the east side of the city of Albany. The facility is surrounded on the east, west and south side by drainage ditches which also receive process / cooling water from plant operations. This water drains into Arnold lake on the southwest side of the facility and then into the Flint River.

Site History: The facility began operation in 1968. The facility is now in the proces of closing.

Waste Types: ☒ Liquid ☐ Solid ☐ Sludge ☐ Gas
☐ Corrosive ☒ Ignitable ☐ Radioactive
☐ Volatile ☒ Toxic ☐ Reactive
☐ Unknown
☐ Other:

Hazard Evaluation:

Known or Suspected Hazardous/Toxic Materials: naptha and 1,1,1 trichloethane

Toxic and Pharmacologic Effects: Toxic by inhalation and ingestion.

Reactivity, Stability, Flammability: Vapors are expected to be below the lower explosive limit.

Overall Hazard: ☐ Serious ☐ Moderate
☒ Low ☐ Unknown

Proposed On-site Activities:

(1) Arrive on-site and interview the environmental coordinator, Mr. Charles S. Homola, to gain a more accurate picture of past waste handling practices.

(2). Locate old waste storage locations and obtain soil samples.

(3). Obtain water samples from on-site wells and effluent discharge points into the Flint River.

Perimeter Establishment:

Map/Sketch attached? Yes
Perimeter identified? yes
Zones of contamination identified? To be identified during the site reconnaissance.

Recommended Level(s) of Protection: Level D

Respiratory: None required unless solvent vapors are encountered during sampling.

Modifications: As necessary.

Field Dress: Level D

Monitoring Procedures:

Site Monitoring Equipment:

RATING FACTOR	ASSIGNED VALUE				Multiplier	SCORE	MAX SCORE
1 Observed Release	0		45		1	45	45
If observed release = 45, goto 4 If observed release = 0, goto 2							
=====							
2 Route Characteristics							
Depth to Aquifer of Concern	0	1	2	3	2	NA	6
Net Precipitation	0	1	2	3	1	NA	3
Permeability of Unsaturated Zone	0	1	2	3	1	NA	3
Physical State	0	1	2	3	1	NA	3
Total Route Characteristics Score						NA	15
=====							
3 Containment	0	1	2	3	1	NA	3
=====							
4 Waste Characteristics							
Toxicity/Persistence	0	3	6	9	12	15	18
Hazardous Waste Quantity	0	1	2	3	4	5	6
Total Waste Characteristics Score						13	26
=====							
5 Targets							
Groundwater Use	0	1	2	3	3	6	9
Distance to Nearest Well/Population Served	0	4	6	8	10	12	16
Total Targets Score						41	49
=====							
6 If line 1 is 45, multiply 1 x 4 x 5						23985	57330
If line 1 is 0, multiply 2 x 3 x 4 x 5						NA	
=====							
7 Divide line 6 by 57,330 and multiply by 100						Sgw = 41.8	
						Ssw = 0	
						Saw = 0	

FINAL SCORE = SM = 24.2

hrs alban

1 OBSERVED RELEASE

-Pg 1-

Is there direct evidence (analytical) of release of a substance of concern from a facility to groundwater?

Enter "1" in appropriate space: [1] YES [] NO

If "YES", list contaminants detected (5 max); then GOTO B228:

1. DCE
2. TCA
3. Benzene
4. Xylene
5. Toluene

2 ROUTE CHARACTERISTICS (if NO observed release)

Depth to Aquifer of Concern:

Measured vertically from lowest point of haz substance to highest seasonal level of saturated zone of aquifer of concern.

Distance	Assigned Value
>150 Ft	0
76 to 150 Ft	1
21 to 75 Ft	2
0 to 20 Ft	3

Enter appropriate assigned value: []

Provide rationale for assigned value:

Net Precipitation:

Indicates potential for leachate generation at facility and defined by precipitation minus evaporation.

If available, use net seasonal rainfall data from National Climatic Center, Asheville, NC. If not available for region of concern, refer to Climatic Atlas of the United States, U.S. Dept. of Commerce, National Climatic Center, and use data from maps of normal annual precip. and mean annual lake evap.

Net Precip	Assigned Value
< -10 in	0
-10 to +5 in	1
+5 to +15 in	2
> +15 in	3

Enter appropriate assigned value: []

Define source of data:

Permeability of Unsaturated Zone or Intervening Geological Formations:

-Pg 2-

Type Material	Hyd Conductivities	Assigned Value
Clay; Till; Shale; unfrac meta or ign rx	< 10^{-7} cm/sec	0
Silt; Loess; Silty CL; Silty Loams; CL Loams; < permeable limestone; dolomite; sandstone; mod permeable till	10^{-5} to 10^{-7} cm/sec	1
Fine sand; silty sand; sandy loams; loamy sands; mod permeable limestone; dolomite; sandstone (no karst); mod frac meta or ign rxi some coarse till	10^{-3} to 10^{-5} cm/sec	2
Gravel; Sand; hi frac meta or ign rxi karst limestone or dolomite	> 10^{-3} cm/sec	3

Enter appropriate assigned value: []

Define source of data:

Physical State of haz substance at time of disposal. Gases generated by
haz substance also to be considered in rating.

Physical State	Assigned Value
Solid, consolidated or stabilized	0
Solid, not consol or stabilized	1
Powder or fine mat'l	2
Liquid, sludge or gas	3

Enter appropriate assigned value: []

Define source of data:

3 CONTAINMENT (if NO observed release)

-Pg 3-

Measure of natural or artificial means used to reduce contaminant migration into groundwater (e.g. - liners, leachate collection, sealed containers). For assigning values, consider all ways that haz substances are stored/disposed at facility. If more than one method, assign highest value.

Assign 0 if 1) all haz substances underlain by essentially impermeable (natural or artificial) and adequate leachate control and diversion systems; or 2) no groundwater in vicinity.

SURFACE IMPOUNDMENTS	Value	CONTAINERS
Sound run-on diversion, good liner compatible w/ waste, and adequate leachate collect sys	0	Sealed and sound, good liner, and adequate leachate collect sys
Good liner w/ no leachate collect sys; or inadequate freeboard	1	Sealed and sound, no liner or mod permeable liner
Potentially unsound run-on diversion; or mod perm compatible liner	2	Leaking, mod perm liner
Unsound run-on divert; no liner; or incompatible liner	3	Leaking and no liner or incompatible liner

NOTE: "and" = must meet ALL criteria
 "or" = must meet ONE criterion

PILES	Value	LANDFILL
Uncovered and stabilized; or covered, unstabilized and good liner	0	Good liner compatible w/ waste and good leachate collection system
Uncovered and stabilized, mod perm liner, and leachate collection	1	Good compatible liner, no leachate collection, and no ponding on surface
Uncovered, unstabilized, mod perm liner, and no leachate collection	2	Mod perm compatible liner, and no ponding on surface
Uncovered, unstabilized and no liner	3	No liner or incompatible liner; mod perm compatible liner; ponding on surface; no run-on control

Enter appropriate assigned value: []

Provide brief rationale for value:

4 WASTE CHARACTERISTICS

-Pg 4-

Evaluate most hazardous substance at facility that could migrate to groundwater. Use substance with highest score. Note that substance observed in release category CAN differ from substance used in this rating. Where total inventory known, only those present in amounts greater than reportable quantity need be evaluated.

Toxicity and Persistence are evaluated in combined matrix. Individual values are defined as follows:

Toxicity: given value using ratings in Sax or National Fire Protection Association (NFPA).

Toxicity	Assigned Value
Sax or NFPA = 0	0
Sax or NFPA = 1	1
Sax or NFPA = 2	2
Sax = 3 or NFPA = 3 or 4	3

GOTO AM-1 for table of Contract Lab Program compounds

Persistence: given value based on biodegradability

Persistence	Assigned Value
Easy biodegrade	0
Straight chain HC's	1
Substituted and other ring compounds	2
Metals, polycyclic compounds and halogenated	3

COMPOUNDS UNDER CELL C66:	T VALUE	P VALUE	MATRIX SCORE
1 DCE	[3]	[1]	12
2 TCA	[2]	[2]	12
3 Benzene	[3]	[1]	12
4 Xylene	[2]	[1]	9
5 Toluene	[3]	[1]	12

If more than 5 compounds, keep one highest and enter data for 4 more (GOTO C65 to enter!) Reiterate as necessary. If no T Value, enter 0.

Highest matrix score for T/P: [12]

Brief rationale for compounds selected: Compounds verified to be present in groundwater at site.

Hazardous Waste Quantity includes all hazardous substances at facility as received, except that with Containment Value = 0. Do NOT include contaminated soil or water; rather, estimate amount of contaminating substance.

No. Drums	Tons;Cu Yds	Assigned Value
0	0	0
1 - 40	1 - 10	1
41 - 250	11 - 62	2
251 - 500	63 - 125	3
501 - 1000	126 - 250	4
1001 - 2500	251 - 625	5
2501 - 5000	626 - 1250	6
5001 - 10,000	1251 - 2500	7
>10,000	>2500	8

Enter appropriate assigned value: [1]

Provide brief rationale for assigned value: Assume up to 4000 lbs (2 tons) lost due to spillage over life of facility.

5 TARGETS

-Pg 6-

Groundwater Use from aquifer of concern within 3 miles of haz substance, including geographical extent of measurable concentration in aquifer.

Groundwater Use	Assigned Value
Unusable (e.g. - v. saline, v. low yield, etc.)	0
Commercial, industrial or irrigation and another water source presently available; not used but usable	1
Drinking water w/ municipal water from alternate unthreatened sources presently available (i.e. - minimal hookup); or commercial, industrial or irrigation w/ no other source presently available	2
Drinking water; no municipal water from alternate unthreatened sources presently available	3

Enter appropriate assigned value: [2]

Distance to Nearest Well is measured from haz substance, NOT facility boundary, to nearest well drawing from aquifer of concern. If actual distance is unknown, use distance between substance and nearest occupied building not served by public water.

If discontinuity in aquifer between substance and all wells, score = 0.

Distance	Assigned Value
>3 miles	0
2 - 3 mi.	1
1 - 2 mi.	2
2001 ft. - 1 mi.	3
<2000 ft.	4

Enter appropriate assigned value: [4]

Population Served by Groundwater includes residents as well as others who would regularly use water (e.g.- students, employees).

-Pg 7-

If using dwelling count, assume each dwelling unit = 3.8 residents.

If groundwater used for irrigation, assume 1.5 users per acre irrigated.

Well(s) of concern must be within 3 miles of haz substance, but "population served" need not be. Similarly, people within 3 miles who do not use groundwater are not to be counted.

Population	Assigned Value
0	0
1 - 100	1
101 - 1,000	2
1,001 - 3,000	3
3,001 - 10,000	4
>10,000	5

Enter appropriate assigned value: [4]

Provide rationale for "Population Served": Two trailer parks, net 91 (State memo - 3 SEP 1986); four single homes ($4 \times 3.8 = 16$); approx. 1200 acres irrigated ($1200 \times 1.5 = 1800$). Assume 4000 for Marine Base.

$760 + 16 + 1800 + 4000 = 6576$ equivalent pop. served

Distance to Nearest Well = 4

Population Served = 4

DISTANCE

	0	1	2	3	4
P	0	0	0	0	0
O	1				
P	1	0	4	6	8
U	1				
L	2	0	8	12	16
A	1				
T	3	0	12	18	24
I	1				
O	4	0	16	24	32
N	1				
	5	0	20	30	35

Enter appropriate value from matrix: [35]

Squire, Sanders & Dempsey

Additional Offices:
Brussels, Belgium
Cleveland, Ohio
Columbus, Ohio
Miami, Florida
New York, New York
Phoenix, Arizona

Counsellors at Law.
1201 Pennsylvania Avenue, N.W.
P.O. Box 407
Washington, D.C. 20044

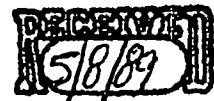
Telephone (202) 626-6600
Cable Squire DC
Telex SPDDC 440003
Telecopier 1 (202) 626-6781
Telecopier 2 (202) 626-6780

Direct Dial Number

(202) 626-6638

May 1, 1989

Mr. Stephen Lingle
Director, Hazardous Site
Evaluation Division
Office of Emergency and
Remedial Response
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460



ATTENTION: NPL Staff

Re: Supplemental Comments on NPL Update #7

Dear Mr. Lingle:

The Firestone Tire & Rubber Company ("Firestone") respectfully submits these supplemental comments on the United States Environmental Protection Agency's ("EPA" or the "Agency") proposal to include on the National Priorities List ("NPL") Firestone's closed tire manufacturing plant in Albany, Georgia. See 53 Fed. Reg. 23988 (June 24, 1988). Firestone requests that the Agency accept these supplemental comments and consider them in its final rule.

Firestone's original comments, submitted August 23, 1988, objected to the inclusion of the Albany plant on the NPL on the grounds that EPA's scoring of the site did not take into account the comprehensive site assessment and extensive remedial activities Firestone had performed. As part of its voluntary efforts to remediate the site, Firestone has continued to conduct quarterly monitoring of conditions at the plant. Data from the fourth quarter 1988 sampling confirm that the Albany plant should be deleted from the final NPL.

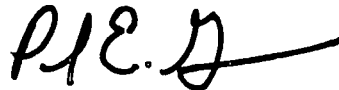
Squire, Sanders & Dempsey

Mr. Stephen Lingle
May 1, 1989
Page 2

The attached report from Firestone's consultant concludes that "although volatile organic compounds continue to be present in a number of monitoring wells in the residuum and the upper Ocala, no adverse impact has been detected in the productive zone of the Ocala." Report at 5 (emphasis added). The report includes groundwater elevation data demonstrating the radially inward flow of groundwater in zones in which compounds have been detected. Report at 2-3. The data further show a general decrease in compound concentrations in residuum groundwater with several contaminants now below maximum contaminant levels, the exception being well MW-1-2. Report at 3-4. Similarly, data from the upper Ocala groundwater wells showed decreased compound concentrations. Report at 4.

The addition of these data to the administrative record demonstrates conclusively that Firestone's Albany plant should not be included on the final NPL.

Very truly yours,



Paul E. Gutermann

Counsel to Firestone Tire &
Rubber Company

L99/PEG:aq

cc: Mrs. Renee Hudson, Georgia DNR
Mr. Greer C. Tidwell, EPA Region V

**RESULTS OF FOURTH-QUARTER SAMPLING
THE FIRESTONE TIRE & RUBBER CO.
ALBANY, GEORGIA FACILITY**

1.0 INTRODUCTION

As authorized by The Firestone Tire & Rubber Co. (Firestone), Woodward-Clyde Consultants (WCC) has completed the fourth-quarter groundwater sampling and analysis at Firestone's former tire manufacturing facility in Albany, Georgia. This work has been performed as the continuation of a voluntary site assessment undertaken by Firestone as part of its facility closure operations.

This report provides a summary of sampling procedures and an assessment of the data generated.

2.0 SAMPLING PROCEDURES

Groundwater samples were obtained on 26 and 27 October 1988 in accordance with the revised Groundwater Sampling and Analysis Plan (dated 03-01-88), which was submitted with the First-Quarter report.

Fifteen (15) samples were collected on 26 October 1988, and included a duplicate of PW-2 (ALB-PW-3-1088) and a field blank (ALB-MW-8-1-1088). Seven (7) samples were collected on 27 October 1988 and included a duplicate of MW-1-4 (ALB-MW-8-2-1088) and a field blank (ALB-MW-8-3-1088). All samples were shipped by overnight courier in an iced, insulated shipping container on 27 October 1988. The shipment included a trip blank.

3.0 GROUNDWATER ELEVATIONS

Groundwater levels were measured in all wells on 26 October 1988. Summaries of groundwater elevations are presented on Table 1 and Table 2. Table 2 contains elevations grouped by formation monitored (e.g. - residuum, upper Ocala, deep Ocala).

Groundwater elevations were plotted on base maps of the site for evaluating groundwater flow trends. The data for the soil (residuum) monitoring wells are plotted on Figure 1 and suggest a flow trend to the east-southeast, with an apparent "sink" in the courtyard area. This pattern is consistent with previous measurements.

The groundwater elevation data for the upper Ocala monitoring wells are plotted on Figure 2. The data suggest an apparent groundwater sink both in the courtyard area and at the west-central side of the plant facility, causing a radially inward flow of groundwater. These conditions remain consistent with previous measurements.

The groundwater elevation data for the deep, productive zone of the Ocala are plotted on Figure 3. The data continue to indicate a southwesterly trend of groundwater flow.

4.0 CHEMICAL ANALYTICAL RESULTS

The groundwater samples were analyzed for purgeable halocarbons and purgeable aromatics by Aqua Tech Environmental Consultants, Inc. of Melmore, Ohio. Methods 8010 and 8020 (SW-846) were employed as the analytical procedures. The laboratory's report is contained in Appendix A. The analytical results are summarized by water-bearing stratum in Tables 3, 4 and 5. The summary data in the Tables includes "flags" denoting sample results that exceed an established Final Maximum Contaminant Level (MCL) or exceeds a Proposed MCL. The comparative criteria are presented on Table 6.

Table 3 provides a summary of analytical data for wells set in the soil (residuum) groundwater system. With the exception of MW-1-2, those wells that had no previous organic contaminants (MW-7-8; BMW-2; BMW-4) continue to have no contaminants. The sample from MW-1-2 again contained trace concentrations of 1,1-DCE (1.7 µg/l) and 1,1,1-TCA (2.4 µg/l), and also contained benzene (6.5 µg/l). In the courtyard area (Figure 4), well MW-1-4 was reported to still contain the three compounds usually detected (1,1-DCA; 1,1-DCE; 1,1,1-TCA). All three compounds again appear to have decreased in concentration and the concentration of DCE fell below the MCL. In the southern portion of the property, well BMW-3 contained

1,1-DCA and 1,1-DCE at concentrations similar to previous samples. The DCE concentration did not exceed the MCL. Well MW-12-1 exhibited concentrations somewhat lower than the previous two rounds of samples. Only the concentrations of DCE exceeded MCL's. However, the sample from MW-12-1 did appear to contain benzene in excess of the MCL. Benzene had not previously been detected at this well in any samples.

Samples from three upper Ocala wells in the courtyard area (MW-1-1; MW-1-3; MW-1-5) continue to contain detectable concentrations of organic compounds. Well MW-1-1 (Figure 5) exhibited fuel components (benzene, toluene, ethylbenzene) and chlorinated compounds (DCA; DCE; TCA). Concentrations of benzene and DCE exceeded MCL's. Well MW-1-3 exhibited compound concentrations similar to the previous event sample, with DCE and TCA continuing to exceed MCL's. Well MW-1-5 again contained four compounds (DCA; DCE; TCA; TCE) with DCE exceeding the MCL. Samples from wells RW-2 and RW-3 continue to show trace concentrations of 1,1-DCA, but at less than 1 µg/l. Wells RW-1 and MW-1-6 continue to be free of organic compounds.

Table 5 provides a summary of data for wells developed in the deep, productive zone of the Ocala. As indicated, all wells continue to be free of volatile organic compounds.

5.0 SUMMARY

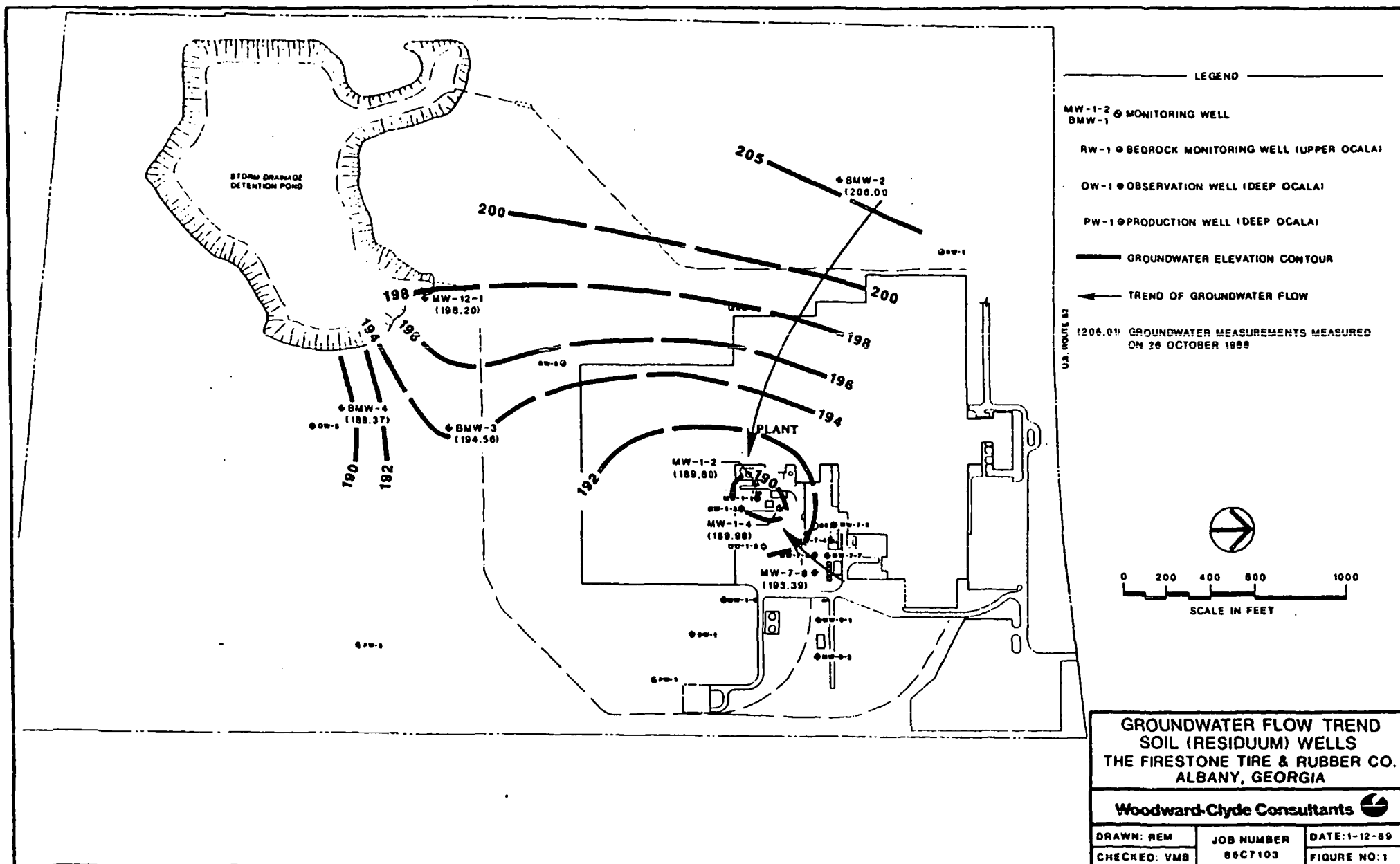
Based on the results of one year (four quarters) of monitoring work, the following summary statements can be made:

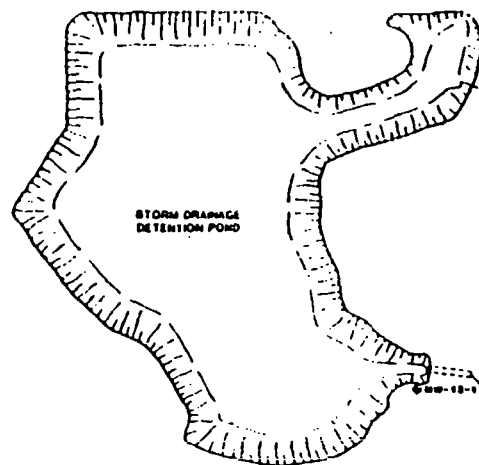
1. There continues to be a groundwater "sink" in the general central area of the plant, affecting the flow in the soil (residuum) and upper Ocala systems.
2. The flow trend in the deep, productive zone of the Ocala, continues to be southwesterly.

3. The number of organic compounds in samples from wells in the soil (residuum) groundwater is similar to historical conditions with MCL's exceeded at two wells (MW-1-4; MW-12-1).
 - a. Compound concentrations in MW-1-4 (residuum-courtyard) appear to indicate a general decrease, with DCE falling below the MCL. However, MW-1-2 now appears to contain trace (1 to 2 µg/l) concentrations of DCE and TCA and, in the east event, also contained benzene in excess of the MCL. Historically, MW-1-2 had been "clean".
 - b. Compound concentrations in MW-12-1 (residuum-pond area) initially increased then decreased over the year. Concentrations are still higher than during the initial investigation, and benzene and DCE exceeded the MCL as of the fourth quarter.
 - c. Well BMW-3 exhibited no significant fluctuations in compound concentrations and no compounds have exceeded MCL's.
4. The number and concentrations of organic compounds in the upper Ocala groundwater fluctuated in various wells.
 - a. Concentrations of fuel components and chlorinated compounds were below detection limits in MW-1-1 in the first quarter, but the number and concentrations of compounds subsequently increased. Benzene and DCE exceeded MCL's in the last two quarters. However, compound concentrations have decreased overall since the initial investigation.
 - b. Well MW-1-3 exhibited an overall increase in organic compound concentrations with DCE and TCA continuing to exceed MCL's.
 - c. Well MW-1-5 exhibited a general decrease in compound concentrations. As of the fourth quarter, the concentration of DCE remained slightly above the MCL.

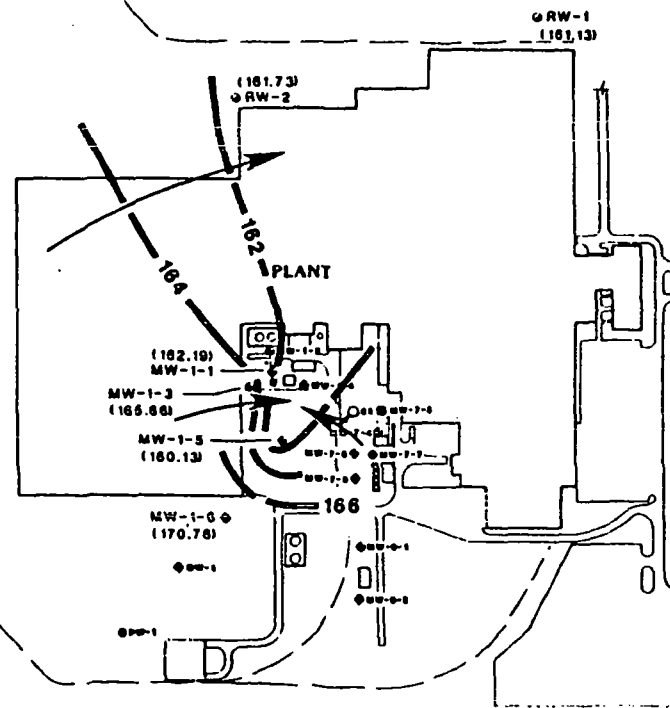
5. Organic compound concentrations in the deep, productive zone of the Ocala continued to be below method detection limit during the entire monitoring period.

Given the monitoring results to date, although volatile organic compounds continue to be present in a number of monitoring wells in the residuum and the upper Ocala, no adverse impact has been detected in the productive zone of the Ocala.





(185.56)
RW-3



LEGEND

MW-1-2 ● MONITORING WELL
BMW-1

RW-1 ● BEDROCK MONITORING WELL (UPPER Ocala)

OW-1 ● OBSERVATION WELL (DEEP Ocala)

PW-1 ● PRODUCTION WELL (DEEP Ocala)

— GROUNDWATER ELEVATION CONTOUR

← TREND OF GROUNDWATER FLOW

(181.13) GROUNDWATER ELEVATIONS MEASURED
ON 26 OCTOBER 1988

U.S. ROUTE 87

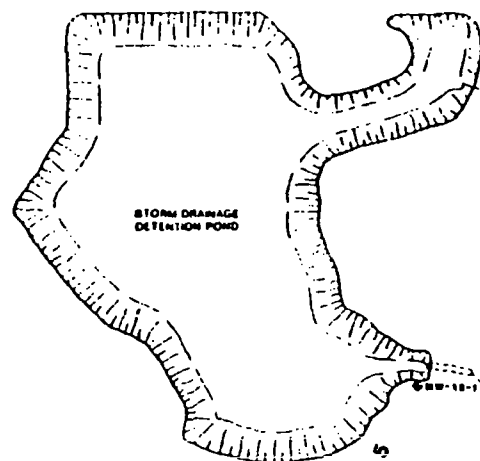


0 200 400 600 1000
SCALE IN FEET

GROUNDWATER FLOW TREND
UPPER Ocala (BEDROCK) WELLS
THE FIRESTONE TIRE & RUBBER CO.
ALBANY, GEORGIA

Woodward-Clyde Consultants

DRAWN: REM	JOB NUMBER 86C7103	DATE: 1-12-88
CHECKED: VMB		FIGURE NO: 2



OW-2
(156.20)

PW-2
(156.5)

156.5

OW-3
(156.20)

OW-4
(156.20)

PLANT

PW-1
(157.0)

OW-1
(156.98)

LEGEND

MW-1-2 ● MONITORING WELL
BMW-1 ●

RW-1 ● BEDROCK MONITORING WELL (UPPER OCAIA)

OW-1 ● OBSERVATION WELL (DEEP OCAIA)

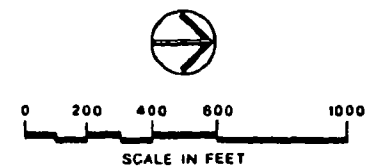
PW-1 ● PRODUCTION WELL (DEEP OCAIA)

— GROUNDWATER ELEVATION CONTOUR

← TREND OF GROUNDWATER FLOW

(156.20) GROUNDWATER ELEVATIONS MEASURED
ON 28 OCTOBER 1988

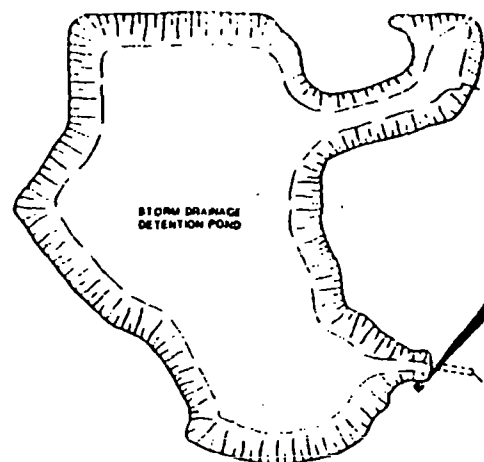
U.S. ROUTE 82



GROUNDWATER FLOW TREND
DEEP OCAIA (BEDROCK) WELLS
THE FIRESTONE TIRE & RUBBER CO.
ALBANY, GEORGIA

Woodward-Clyde Consultants

DRAWN: REM	JOB NUMBER 85C7103	DATE: 1-11-89
CHECKED: VMB		FIGURE NO: 3



STORM DRAINAGE
DETENTION POND

BMW-2
*

MW-12-1
1,1-DCA 0.088
1,1-DCE 0.015
1,1,1-TCA 0.130
BENZENE 0.007

BMW-4
*

BMW-3
1,1-DCA 0.027
1,1-DCE 0.002
1,1,1-TCA 0.001

MW-1-2
1,1-DCE 0.002
1,1,1-TCA 0.002
BENZENE 0.007

PLANT

MW-1-4
1,1-DCA 0.001
1,1-DCE 0.054
1,1,1-TCA 0.001

MW-7-8
*

LEGEND

MW-1-2 ◉ MONITORING WELL
BMW-1

RW-1 ◉ BEDROCK MONITORING WELL (UPPER OCALA)

NOTES:

RESULTS EXPRESSED AS mg/l (ppm)
COMPOUND SHOWN ONLY IF DETECTED
RESULTS FOR 27 OCTOBER 1988 SAMPLING

* NONE DETECTED

U.S. ROUTE 82
SYLVESTER ROAD

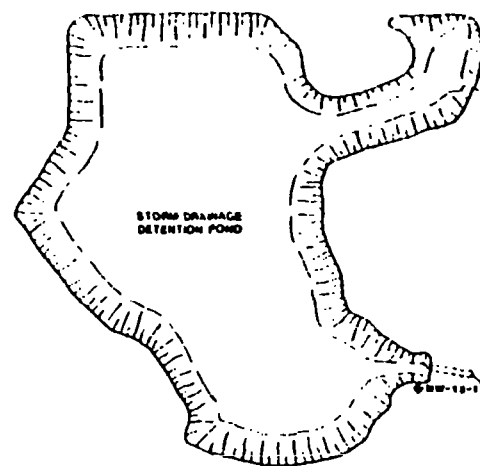


0 200 400 600 1000
SCALE IN FEET

VOLATILE ORGANIC COMPOUNDS
IN SOIL (RESIDUUM) WELLS
THE FIRESTONE TIRE & RUBBER CO.
ALBANY, GEORGIA

Woodward-Clyde Consultants

DRAWN: REM	JOB NUMBER	DATE: 1-11-89
CHECKED: VMB	86C7103	FIGURE NO 4



RW-2
1,1-DCA 0.001

RW-3
1,1-DCA 0.001

MW-1-3
1,1-DCA 0.150
1,1-DCE 0.530
1,1,1-TCA 0.340

MW-1-5
1,1-DCA 0.021
1,1-DCE 0.008
1,1,1-TCA 0.001
TCE 0.001

MW-1-1
BENZENE 0.053
1,1-DCA 0.008
1,1-DCE 0.019
1,1,1-TCA 0.008
TOLUENE 0.018
ETHYLBENZ 0.020

MW-1-6
*

RW-1
*

LEGEND

MW-1-2 @ MONITORING WELL
BMW-1

RW-1 @ BEDROCK MONITORING WELL (UPPER OCALA)

NOTES:

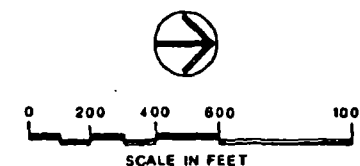
RESULTS EXPRESSED AS mg/l (ppm)

COMPOUND SHOWN ONLY IF DETECTED

RESULTS FOR 27 OCTOBER 1988 SAMPLING

* NONE DETECTED

U.S. ROUTE 82
STYLER ROAD



VOLATILE ORGANIC COMPOUNDS
IN UPPER OCALA
(BEDROCK) WELLS
THE FIRESTONE TIRE & RUBBER CO.
ALBANY, GEORGIA

Woodward-Clyde Consultants

DRAWN: REM	JOB NUMBER	DATE: 1-11-89
CHECKED: VMB	85C7103	FIGURE NO. 5

TABLE 1. SUMMARY OF GROUNDWATER ELEVATIONS
FIRESTONE - ALBANY, GEORGIA

Well No.	Ground Elev.	02/17/86	03/24/86	05/27/86	09/19/86	10/15/86	05/04/87	01/19/88	04/30/88	07/27/88	10/26/88
MW-1-1	213.4	168.24	167.79	162.69	159.89	159.69	169.49	162.14	163.59	163.11	162.19
MW-1-2	214.0			188.95	187.55	186.00	192.75	201.24	200.24	189.85	189.60
MW-1-3	212.1			167.80	163.40	162.90	173.10	165.24	169.77	167.00	165.66
MW-1-4	212.6			188.25	183.60	182.60	193.90	188.56	194.28	189.72	189.96
MW-1-5	212.2			160.42	159.47	159.37	168.47	160.22	166.07	161.28	160.13
MW-1-6	214.5					[155.5]	176.91	167.34	173.78	170.81	170.76
MW-7-3	214.8	210.34	209.69	205.14	destroyed						
MW-7-4	214.8	191.03	197.18	188.38	replaced	[175.4]	[175.4]	[175.4]	[175.4]	[175.4]	[175.4]
MW-7-5	212.9			164.64	*	[163.3]	[163.3]	broken			
MW-7-7	213.8			168.80	destroyed						
MW-7-8	212.6			185.44	187.59	185.54	190.94	195.41	195.49	188.18	193.39
MW-9-1	212.2	[168.6]	[168.6]	[168.6]	[168.6]	[168.6]	171.87	[168.6]	[168.6]	[168.6]	[168.6]
MW-9-2	211.4	[177.9]	[177.9]	[177.9]	[177.9]	[177.9]	[177.9]	[177.9]	[177.9]	[177.9]	[177.9]
MW-12-1	206.3	201.13	198.93	196.68	197.08	197.18	197.63	200.97	200.88	198.30	198.28
BMW-2	210.5	205.51	205.36	204.06	203.11	202.71	205.41	206.10	208.19	206.11	206.01
BMW-3	214.0	200.94	195.74	185.99	186.09	189.44	194.44	197.39	198.73	193.14	194.56
BMW-4	217.1			190.26	184.71	184.01	193.71	187.81	196.47	188.69	188.37
RW-1	213.5					159.53	171.53	164.70	170.03	162.49	161.13
RW-2	214.1					160.49	167.49	161.74	165.14	161.81	161.73
RW-3	214.5					163.49	169.49	165.53	168.68	164.40	165.56
OW-1	-	164.34	165.14	157.04	*	154.84	165.54	159.21	164.99	156.90	156.99
OW-2	216.5	*	*	*	*	154.10	164.20	158.72	163.96	156.10	156.20
PW-1	214.4	*	*	*	*	*	*	159.5	164.5	157.0	157.0
PW-2	219.7	*	*	*	*	*	*	158.5	164.3	156.5	156.5

1. Elevations in feet above mean sea level.

2. PW-1, PW-2, OW-1 & OW-2 are deep Production & Observation wells in the Ocala aquifer; MW-1-1, MW-1-3, MW-1-5, MW-1-6, RW-1, RW-2, and RW-3 are monitoring wells considered to be in the upper Ocala. All others in residuum.

3. "*" means well not accessible for measurement on the date.

4. Blank space means well not installed at the time.

5. [168.6] = DRY WELL, shows well bottom elevation.

TABLE 2. SUMMARY OF GROUNDWATER ELEVATIONS BY FORMATION
FIRESTONE - ALBANY, GEORGIA

SOIL (RESIDUUM) MONITORING WELLS

Well No.	02/17/86	03/24/86	05/27/86	09/19/86	10/15/86	05/04/87	01/19/88	04/20/88	07/27/88	10/26/88
MW-1-2			188.95	187.55	186.00	192.75	201.24	200.24	189.85	189.60
MW-1-4			188.25	183.60	182.60	193.90	188.56	194.28	189.72	189.96
MW-7-8			185.44	187.59	185.54	190.94	195.41	195.49	188.18	193.39
MW-12-1	201.13	198.93	196.68	197.08	197.18	197.63	200.97	200.88	198.30	198.28
BMW-2	205.51	205.36	204.06	203.11	202.71	205.41	206.10	208.19	206.11	206.01
BMW-3	200.94	195.74	185.99	186.09	189.44	194.44	197.39	198.73	193.14	194.56
BMW-4			190.26	184.71	184.01	193.71	187.81	196.47	188.69	188.37

UPPER OCALA MONITORING WELLS

Well No.	02/17/86	03/24/86	05/27/86	09/19/86	10/15/86	05/04/87	01/19/88	04/20/88	07/27/88	10/26/88
MW-1-1	168.24	167.79	162.69	159.89	159.69	169.49	162.14	163.59	163.11	162.19
MW-1-3			167.80	163.40	162.90	173.10	165.24	169.77	167.00	165.66
MW-1-5			160.42	159.47	159.37	168.47	160.22	166.07	161.28	160.13
MW-1-6					[155.5]	176.91	167.34	173.78	170.81	170.76
RW-1					159.53	171.53	164.70	170.03	162.49	161.13
RW-2					160.49	167.49	161.74	165.14	161.81	161.73
RW-3					163.49	169.49	165.53	168.68	164.40	165.56

DEEP OCALA PRODUCTION AND OBSERVATION WELLS

Well No.	02/17/86	03/24/86	05/27/86	09/19/86	10/15/86	05/04/87	01/19/88	04/20/88	07/27/88	10/26/88
OW-1	164.34	165.14	157.04	*	154.84	165.54	159.21	164.99	156.90	156.99
OW-2	*	*	*	*	154.10	164.20	158.72	163.96	156.10	156.20
PW-1	*	*	*	*	*	*	159.5	164.5	157.0	157.0
PW-2	*	*	*	*	*	*	158.5	164.3	156.5	156.5

1. Elevations in feet above mean sea level.
2. *** means well not accessible for measurement on the date.
3. Blank space means well not installed at the time.
4. [168.6] = DRY WELL, shows well bottom elevation.

TABLE 3. SUMMARY OF ANALYTICAL RESULTS - SOIL (RESIDUUM) MONITORING WELLS
FIRESTONE - ALBANY, GEORGIA

	MW-1-2						MW-1-4						MW-7-8					
	05/30/86	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88	05/30/86	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88	
Benzene	*	*	*	*	*	0.007 +	*	*	*	*	*	*	*	*	*	*	*	
1,1-DCA	*	*	*	*	*	*	0.003	0.002	0.003	*	0.002	0.001	*	*	*	*	*	
1,1-DCE	*	*	*	*	0.002	0.002	0.194 +	0.205 +	0.059 +	0.085 +	0.076 +	0.054 +	*	*	*	*	*	
Ethylbenzene	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
1,1,1-TCA	*	*	*	*	0.001	0.002	0.008	0.007	0.006	*	0.002	0.001	*	*	*	*	*	
TCE	*	*	*	*	*	*	*	0.001	*	*	*	*	*	*	*	*	*	
Toluene	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Xylenes	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

	MW-12-1								BMW-2							
	02/18/86	03/25/86	05/30/86	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88	02/18/86	03/25/86	05/30/86	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88
Benzene	*	*	*	*	*	*	*	0.007 +	*	*	*	*	*	*	*	*
1,1-DCA	0.007	0.015	0.007	0.004	0.069	0.115	0.142	0.088	*	*	*	*	*	*	*	*
1,1-DCE	0.002	0.003	0.001	0.001	0.013 +	0.017 +	0.017 +	0.015 +	*	*	*	*	*	*	*	*
Ethylbenzene	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1,1,1-TCA	0.012	0.025	0.004	0.006	0.304 +	0.290 +	0.229 +	0.130	*	*	*	*	*	*	*	*
TCE	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Toluene	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Xylenes	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Methylene Cl	*	*	*	*	*	0.016	*	*	*	*	*	*	*	*	*	*

	BMW-3								BMW-4					
	02/18/86	03/25/86	05/30/86	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88	05/30/86	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88
Benzene	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1,1-DCA	0.018	0.023	0.018	0.016	0.023	0.023	0.033	0.027	*	*	*	*	*	*
1,1-DCE	0.002	0.002	0.001	0.001	0.003	*	0.003	0.002	*	*	*	*	*	*
Ethylbenzene	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1,1,1-TCA	0.001	0.002	0.001	0.001	*	*	*	0.001	*	*	*	*	*	*
TCE	0.001	*	*	*	*	*	*	*	*	*	*	*	*	*
Toluene	*	*	*	*	0.003	*	*	*	*	*	*	*	*	*
Xylenes	*	*	*	*	0.003	*	*	*	*	*	*	*	*	*

- NOTES: 1. Results expressed in mg/l (ppm)
2. Organic compounds shown only if detected in at least one sample
3. + denotes exceeds established Final MCL - Refer to Table 6
4. ^ denotes exceeds Proposed MCL
5. * denotes less than method detection limit
6. Blank space denotes not analyzed

TABLE 4. SUMMARY OF ANALYTICAL RESULTS - UPPER OCALA MONITORING WELLS
FIRESTONE - ALBANY, GEORGIA

	MW-1-1								MW-1-3					
	02/18/86	03/25/86	05/30/86	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88	05/30/86	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88
Benzene	0.199	+	0.315	+	0.030	+	*	0.082	+	0.053	+	*	*	*
1,1-DCA	*	0.002	0.002	0.002	*	*	0.006	0.006	0.006	0.020	*	0.078	0.139	0.150
1,1-DCE	0.032	+	0.033	+	0.018	+	0.018	+	0.019	+	*	0.350	+	0.530
Ethylbenzene	0.327	0.421	0.007	*	*	0.188	*	0.020	*	*	*	*	*	*
1,1,1-TCA	0.042	0.047	0.017	0.001	*	*	0.005	0.006	0.136	0.172	*	0.340	+	0.340
TCE	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Toluene	0.135	0.154	0.047	*	*	0.042	0.013	0.016	*	*	*	*	*	*
Xylenes	1.871	^	2.300	^	0.035	*	0.684	^	0.112	*	*	*	*	*
T-1,2-DCE	*	*	*	*	*	*	*	*	*	*	*	*	*	*

	MW-1-5						MW-1-6			
	05/30/86	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88	01/21/88	04/21/88	07/27/88	10/27/88
Benzene	*	*	*	*	*	*	*	*	*	*
1,1-DCA	0.039	0.040	*	0.019	0.026	0.021	*	*	*	*
1,1-DCE	0.015	+	0.014	+	0.007	+	0.009	+	0.008	+
Ethylbenzene	*	*	*	*	*	*	*	*	*	*
1,1,1-TCA	0.006	0.004	*	*	0.001	0.001	*	*	*	*
TCE	0.002	0.002	*	*	0.002	0.001	*	*	*	*
Toluene	*	*	*	*	*	*	*	*	*	*
Xylenes	*	*	*	*	*	*	*	*	*	*
T-1,2-DCE	*	0.002	*	*	*	*	*	*	*	*

	RW-1					RW-2					RW-3				
	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88	10/16/86	01/21/88	04/21/88	07/27/88	10/27/88
Benzene	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1,1-DCA	*	*	*	*	*	0.001	0.003	0.002	0.001	0.001	0.004	0.002	0.002	0.002	0.001
1,1-DCE	*	*	*	*	*	0.001	*	*	*	*	*	*	*	*	*
Ethylbenzene	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1,1,1-TCA	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
TCE	*	*	*	*	*	0.002	*	*	*	*	*	*	*	*	*
Toluene	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Xylenes	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T-1,2-DCE	*	*	*	*	*	0.001	*	*	*	*	*	*	*	*	*

- NOTES: 1. Results expressed in mg/l (ppm)
2. Organic compounds shown only if detected in at least one sample
3. + denotes exceeds established Final MCL - Refer to Table 6
4. ^ denotes exceeds Proposed MCL
5. * denotes less than method detection limit

TABLE 5. SUMMARY OF ANALYTICAL RESULTS - DEEP OCALA WELLS
FIRESTONE - ALBANY, GA

	PW-1							
	<u>02/18/86</u>	<u>03/25/86</u>	<u>05/30/86</u>	<u>10/16/86</u>	<u>01/21/88</u>	<u>04/21/88</u>	<u>07/27/88</u>	<u>10/27/88</u>
Volatiles	*	*	*	*	*	*	*	*

	OW-1							
	<u>02/18/86</u>	<u>03/25/86</u>	<u>05/30/86</u>	<u>10/16/86</u>	<u>01/21/88</u>	<u>04/21/88</u>	<u>07/27/88</u>	<u>10/27/88</u>
Volatiles	*	*	*	*	*	*	*	*

	PW-2							
	<u>02/18/86</u>	<u>03/25/86</u>	<u>05/30/86</u>	<u>10/16/86</u>	<u>01/21/88</u>	<u>04/21/88</u>	<u>07/27/88</u>	<u>10/27/88</u>
Volatiles	*	*	*	*	*	*	*	*

	OW-2				
	<u>10/16/86</u>	<u>01/21/88</u>	<u>04/21/88</u>	<u>07/27/88</u>	<u>10/27/88</u>
Volatiles	*	*	*	*	*

- NOTES: 1. Results expressed as mg/l (ppm)
 2. Organic compounds shown only if detected in at least one sample
 3. + denotes exceeds established Final MCL - Refer to Table 6
 4. ^ denotes exceeds Proposed MCL
 5. * denotes less than method detection limit
 6. Blank space denotes not analyzed

TABLE 6. Limits/Guidelines for Organic Compound Concentrations in Water

Final MCL's (mg/l; ppm)		Proposed MCL's (mg/l; ppm)	
Benzene	0.005	1,1-DCA	N.E.
1,1-DCA	N.E.	Ethylbenzene	0.680
1,1-DCE	0.007	Methylene Chloride	N.E.
Methylene Chloride	N.E.	Toluene	2.000
1,1,1-TCA	0.200	Trans-1,2-DCE	0.070
TCE	0.005	Xylenes	0.440

MCL = Maximum Contaminant Level for drinking water

N.E. = None Established

AQUA TECH ENVIRONMENTAL CONSULTANTS, INC.

P.O. Box 76
Melmore, Ohio 44845
(419) 397-2659

DEC 19 88

Client: WOODWARD CLYDE CONSULTANTS	
Address: 32111 AURORA ROAD SOLON, OH 44139 ATTN: VYDAS BRIZGYS	
Project No: 88C6059/FTR-ALBANY	Date(s) of Receipt at Laboratory:
Purchase Order:	10/28/88
Comments:	

Sample Inventory		
Atec No.	Client No.	Method(s)
SEE ATTACHED CHAIN OF CUSTODY		

Comments:

Authorized Signature: *Roland S. Howarth / RH*

Title: Melmore Laboratory Manager

Date Released: DECEMBER 12, 1988

Woodward Clyde Consultants
 Project #88C6059-01/FTR-ALBANY
 Volatile Fraction
 Method #8010, 8020
 Date Received: 10/28/88

ATEC Sample No.	18161	18162	18163	18164	18165
Client Sample No. ALB-	PW-1	OW-1	PW-2	PW-3	BMW-4
Analyst	LLR	LLR	LLR	LLR	LLR
Date Analyzed:	11/01/88	11/01/88	11/01/88	11/01/88	11/01/88
Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbon Tetrachloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chloroethyl Vinyl Ether	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorobromomethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	< 0.5	1.3*	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	< 0.5	< 0.5	< 0.5	*2.4	< 0.5
1,2-Dichloropropane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethyl Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Bromide	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	< 0.5	< 0.5	< 0.5	*0.8	< 0.5
1,1,2-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylenes	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

All results reported as ug/l.

* Confirmed Lab Error: ND in re-runs - RSG 1/18/89
 ** Confirmed Lab Error: ND in split, ND in re-runs - RSG 1/18/89

Woodward Clyde Consultants
 Project #88C6059-01/FTR-ALBANY
 Volatile Fraction
 Method #8010, 8020
 Date Received: 10/28/88

ATEC Sample No.	18166	18167	18168	18169	18170
Client Sample No. ALB-	OW-2	BMW-3	BMW-2	MW-8-1	MW-12-1
Analyst	LLR	LLR	LLR	LLR	LLR
Date Analyzed	11/01/88	11/01/88	11/01/88	11/01/88	11/01/88
Benzene	< 1.0	< 1.0	< 1.0	< 1.0	6.6
Bromoform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbon Tetrachloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	< 1.0	< 1.0	< 1.0	< 1.0	16.4
2-Chloroethyl Vinyl Ether	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	< 0.5	< 0.5	< 0.5	4.9	< 0.5
Dichlorobromomethane	< 0.5	< 0.5	< 0.5	0.7	< 0.5
Dichlorodifluoromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	< 0.5	26.5	< 0.5	< 0.5	88.1
1,2-Dichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	< 0.5	2.4	< 0.5	< 0.5	14.9
1,2-Dichloropropane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethyl Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Bromide	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	< 0.5	< 0.5	< 0.5	0.6	< 0.5
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	< 0.5	0.9	< 0.5	< 0.5	130
1,1,2-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylenes	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

All results reported as ug/l.

Woodward Clyde Consultants
 Project #88C6059-01/FTR-ALBANY
 Volatile Fraction
 Method #8010, 8020
 Date Received: 10/28/88

ATEC Sample No.	18171	18172	18173	18174	18175
Client Sample No.	RW-1	RW-2	RW-3	MW-1-6	MW-7-8
Analyst	REB	REB	REB	REB	REB
Date Analyzed	11/02/88	11/02/88	11/02/88	11/02/88	11/02/88
Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbon Tetrachloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chloroethyl Vinyl Ether	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	< 0.5	< 0.5	< 0.6	< 0.5	< 0.5
Chlorobromomethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	< 0.5	< 0.8	< 0.8	< 0.5	< 0.5
1,2-Dichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.9
1,2-Dichloropropane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethyl Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Bromide	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylenes	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

All results reported as ug/l.

Woodward Clyde Consultants
 Project #88C6059-01/FTR-ALBANY
 Volatile Fraction
 Method #8010, 8020
 Date Received: 10/28/88

ATEC Sample No.	18176	18177	18178	18179	18180
Client Sample No. ALB-	MW-1-2	MW-1-1	MW-8-3	MW-1-3	MW-1-5
Analyst	REB	REB	REB	REB	REB
Date Analyzed	11/02/88	11/02/88	11/02/88	11/02/88	11/02/88
Benzene	6.5	53.0	< 1.0	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Carbon Tetrachloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorodibromomethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chloroethyl Vinyl Ether	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	< 0.5	< 0.5	9.9	< 0.5	< 0.5
Dichlorobromomethane	< 0.5	< 0.5	1.7	< 0.5	< 0.5
Dichlorodifluoromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	< 0.5	6.2	< 0.5	150	20.9
1,2-Dichloroethane	< 0.5	< 0.5	< 0.5	1.1	< 0.5
1,1-Dichloroethene	1.7	18.8	< 0.5	530	7.8
1,2-Dichloropropane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethyl Benzene	< 1.0	19.8	< 1.0	< 1.0	< 1.0
Methyl Bromide	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	< 0.5	< 0.5	< 0.5	1.1	< 0.5
Toluene	< 1.0	15.7	< 1.0	< 1.0	< 1.0
trans-1,2-Dichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	2.4	6.2	< 0.5	340	1.4
1,1,2-Trichloroethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	< 0.5	< 0.5	< 0.5	< 0.5	1.2
Trichlorofluoromethane	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Xylenes	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

All results reported as ug/l.

Woodward Clyde Consultants
Project #88C6059-01/FTR-ALBANY
Volatile Fraction
Method #8010, 8020
Date Received: 10/28/88

ATEC Sample No.	18181	18182
Client Sample No. ALB-	MW-1-4	MW-8-2
Analyst	REB	REB
Date Analyzed	8/09/88	8/09/88

Benzene	< 1.0	< 1.0
Bromoform	< 1.0	< 1.0
Carbon Tetrachloride	< 0.5	< 0.5
Chlorobenzene	< 1.0	< 1.0
Chlorodibromomethane	< 0.5	< 0.5
Chloroethane	< 1.0	< 1.0
2-Chloroethyl Vinyl Ether	< 1.0	< 1.0
Chloroform	< 0.5	< 0.5
Dichlorobromomethane	< 0.5	< 0.5
Dichlorodifluoromethane	< 1.0	< 1.0
1,1-Dichloroethane	0.8	1.0
1,2-Dichloroethane	< 0.5	< 0.5
1,1-Dichloroethene	54.4	57.3
1,2-Dichloropropane	< 0.5	< 0.5
cis-1,3-Dichloropropene	< 0.5	< 0.5
trans-1,3-Dichloropropene	< 0.5	< 0.5
Ethyl Benzene	< 1.0	< 1.0
Methyl Bromide	< 1.0	< 1.0
Methyl Chloride	< 1.0	< 1.0
Methylene Chloride	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5
Tetrachloroethene	< 0.5	< 0.5
Toluene	< 1.0	< 1.0
trans-1,2-Dichloroethene	< 0.5	< 0.5
1,1,1-Trichloroethane	1.4	1.3
1,1,2-Trichloroethane	< 0.5	< 0.5
Trichloroethene	< 0.5	< 0.5
Trichlorofluoromethane	< 1.0	< 1.0
Vinyl Chloride	< 1.0	< 1.0
Total Xylenes	< 2.0	< 2.0

All results reported as ug/l.